

Review of 2023 Vehicle Stops Report

Don Love
July 10, 2024

Summary

Information collected by officers for the Missouri Vehicle Stops Report (VSR¹) document that Black drivers are disproportionately affected by officers' actions, achieving the purpose legislators set for it in 2000. The disproportions do not prove discrimination because discrimination means an officer has treated group members differently; that can be determined only by looking at the facts in each case.

But proof of discrimination in court is not the purpose of the VSR. The VSR establishes objective facts to flag problems so that public discussions can occur leading to a consensus on the policies that must be implemented to ensure public safety is protected without compromising individual rights.

High disproportions are circumstantial evidence of discrimination. The evidence is not enough to support prosecution, but it is enough to require an investigation. The residents of jurisdictions have grounds to hold their law enforcement agencies accountable fulfilling their Constitutional obligation to act on convincing facts, the Fourth Amendment, and to apply facts equally for everyone, the Fourteenth Amendment.²

VSR information also documents when officers avoid disproportions. Black drivers have always had lower rates for DWI arrests than White drivers. Disproportions in Drug-Dog Alert searches disappeared when a court ruling required that officers cite evidence to support summoning the dog. One of the things Black drivers hate most is being pressured to give consent to a search. VSR data documented large consent search disproportions against Black drivers until officers recognized the necessity of identifying convincing facts, clearly independent of race, before acting. Statewide consent search disproportions have been higher for White drivers than Black drivers since 2019.

Thanks to recent AGs adding new checkoffs, we can finally begin to see some of the situations that lead to high disproportions against Black drivers. Statewide, Blacks have much lower stop disproportions in their home jurisdictions. A large part of the statewide stop disproportion comes from excess stops being made in about a dozen urban-area jurisdictions, like Independence and Florissant. Are these stops of visiting Black drivers really needed to protect public safety? What can be done to mitigate the impact on ordinary drivers just going to work or shop?

Checkoffs have also been added to see whether investigative stops lead to disproportions. The VSR has had a checkoff for investigative stops since 2004 but officers probably did not know how to use it. Now

¹ Links: [2023 Executive Summary](#)
[2023 Annual State Report](#)
[2023 VSR Agency Specific Reports](#)
[2023 Agency Responses](#)
[Rules & Regulations](#) (Code of State Regulations)
[590.650](#) (the law that mandates the VSR)

² For a summary of case law interpreting the Constitutional guarantees, see the Department of Justice [Investigation of the Ferguson Police Department](#), page 16-17. I generally summarize the guarantees as requiring that officers act compelling facts that are clearly independent of racial stereotypes.

they are broken down into responses to 911 calls, following up on agency bulletins and officer initiative. Some agencies have said the investigative stops result in their disproportions, but officers do not check enough of them.

Quite a few agencies stop Black drivers at rates that don't appear to be excessive when compared to other agencies but still have large disproportions. What's happening is that the stop rates for White drivers are way low. The White drivers are committing the same sorts of minor violations everyone does, but the officers and their supervisors apparently do not think stops are necessary to control lawless behavior among Whites.

The VSR dataset is an essential resource for identifying the sources of problems, including possible discrimination, and creating a consensus on policies that protect public safety and individual rights. Steps are needed to continue refining the information available on stops.

The Disparity Index required by 590.650, the law that mandates the VSR, has not been a satisfactory measure of group disproportions, but removing it in the 2023 VSR is not satisfactory either. Some measure of disproportion is necessary to understand the information. The VSR provides group rates for summary statistics, such as stops and searches, but a comparison of rates is needed.

For instance, the Black rate divided by the White rate provides the multiplier needed for a comparison: For 2023, $44.07/26.82 = 1.64$, so Black drivers are stopped at a rate per driver 1.64 times the White rate.

Care must be taken to avoid errors in the data. Agencies need feedback when requirements are not understood or clerical errors occur so that corrections can be made before the VSR is released.

More checkoffs might be useful. The records agencies collect for their internal use, Incident-Based Data (IBD), in which all the information in each stop is in a separate record, usually displayed as a row in the spreadsheet, are more detailed and can be used to trace connections among variables. For example, the VSR's aggregate data allow groups rates for consent searches and contraband found but IBD allow groups rates for contraband found in consent searches.

Other steps are also important. Agencies need to be able to document the public safety reason for each stop that contributes to a disproportion. Officers must receive prompt feedback on the facts they cite in situations in which disproportions flag possible discrimination; if they know when their facts meet criteria agreed up in the jurisdiction and know when they need to document stronger facts before acting, then their performance will improve, as it did in their use of Drug-Dog Alert and Consent searches.

Below, I go into more detail than just a few people would ever need or want to know, but the detail is what supports the conclusions. Bottom line: if law enforcement knows from data that discrimination might be occurring, then officers can be given the help they need to avoid the distractions of stereotypes and focus on facts clearly independent of race.

What are the concerns in your jurisdiction? How can the data help your community provide public safety without treating groups unfairly?

Contents

Page 3. Disproportions: how to measure them and what to do with them.

Page 7. Drug-Dog Alert Searches: requiring officers to cite specific and articulable facts reduces disproportions.

Page 11. Consent Searches: officers can learn to act only on facts in high-discretion situations.

Page 15. White Privilege: data does not capture when officers ignore violations by a group.

Page 19. Odor Searches: weak evidence leads to vulnerable people being affected.

Page 23. Contraband Found.

Page 28. Investigative Stops: pretext stops alienate Black drivers but officers need to gather information.

Page 34. Non-Resident Drivers: finally, VSR data identifies a significant source of disproportions.

Page 41. Making the Most of the VSR data: miscellaneous reflections on checkoffs and analysis.

Page 44. Conclusion.

Introduction

I receive the complete dataset for the Vehicle Stops Report from the Attorney General and compute rates and disproportions for all law enforcement agencies, covering all categories of data collected. Here's the [link](#). My spreadsheets are on my website: [Love the Missouri Vehicle Stops Report](#).

My spreadsheet is different from the official VSR in that all agencies are together so that filters, formulas and other tools can be used to compare agencies or look for agencies that fit a pattern, such as having low disproportions in their use of consent searches. See examples throughout the discussion below.

What questions would you ask the data? What jurisdiction do you care about? Are you being treated fairly as a driver? Do officers ignore your violations? Do the rates and disproportions reflect your experiences? The VSR was created in response to complaints of Black drivers that they were being disproportionately stopped. More than 20 years of data confirm disproportions but the causes of the disproportions have been slow to become clear.

As an officer, do the disproportions reflect your experiences? One common complaint among officers is that their Disparity Indexes are flawed because they are based on the resident population of their jurisdiction, but large numbers of visitors change the group proportions of drivers they encounter on their patrols so the disproportions overstate Black disproportions.

Disparity Indexes have been removed from the 2023 VSR, but the same problem exists with comparisons of stop rates based on estimates of group drivers. Focusing on stop rates for residents helps, but for some agencies estimates of group drivers are needed to understand what the information means.

On the other hand, rates for actions officers take after making a stop can be based on stops: Searches per stop. Arrests per stop. Contraband found per search and so on. The VSR provides these rates for these situations but only for summary statistics. For searches but not for consent searches, for instance.

Years of data on consent searches have been in the VSR but rates per stop and group comparisons of rates have never been presented. After advocates pointed out the large consent search disproportions against Black drivers, the disproportions declined dramatically, suggesting officers became more careful to check their facts before asking for consent.

The VSR is also unhelpful to officers because its legislation, [590.650](#), requires agencies to evaluate officers on the basis of whether they stop a greater proportion of drivers in a group than the group's proportion of the population. Officers know this is bogus. They need to be held accountable for acting on sufficient facts applied to everyone in the same manner.

See the discussion of these points below, and other explorations I have done in the data.

Or you can do your own explorations. See what you can find.

David Harris and Consent Searches: an historical diversion

In 2010, [David A. Harris](#), University of Pittsburgh School of Law, led panel discussions across the state for Empower Missouri on racial profiling as a threat to public trust in police officers. I was his chauffeur. He told me a good way to address the problem was to publicize disproportions in searches based on the consent of the driver. The numbers are in the Vehicle Stops Report, he told me.

The data had been collected for ten years at that time, but no one had paid attention because the consent search information was buried deep in lists of raw numbers. Stops received more attention because the VSR's Disparity Indexes headlined those disproportions but they were difficult to understand. The disparity indexes were not a real measure of disproportion between groups. The estimates of drivers in jurisdictions made disproportions unreliable. Multiple reasons other than discrimination could be involved in a stop, and so on.

Consent searches, by contrast, were straightforward. Rates could be based on stops, not estimates of drivers. By the time a request for consent would be given, the officer knew all there was to know about the driver: age, rate, home address, criminal record—and the officer had made a perception of race. If an officer had found probable cause for a search, it would have been made. If an officer had found probable cause for an arrest, such as an outstanding warrant, an “incident to arrest” search would have been made. If any hint of violence had occurred, the officer would not have risked escalation.

The consent search situation boils down to whether the officer knew facts sufficient to justify asking for consent. If a high disproportion against Black drivers suggests officers are being distracted by racial stereotypes, the agency has a constitutional responsibility to document the facts officers act on or implement policies that ensure officers are applying the same standards to everyone.

Dr. Harris advised me to figure consent search rates for groups per stop and then compare the rates. Black drivers were subjected to consent searches in 2009 at a rate per stop 1.45 times the White rate. The disproportion for Hispanic drivers was 1.90. Disproportions were extraordinarily high in some agencies:

2009 VSR Consent Search Disproportion Rankings

Post-Stop Analysis		Stops	Authority for Search		
2009 VSR					
PoliceDepartment	Race	Total Stops	Consent Searches >10	Consent Search Rate	Consent Search Disparity >3.00
Chesterfield Police Dept.	Black	808	28	0.03	3.29
Clay County Sheriff's Dept.	Black	202	12	0.06	4.05
Clayton Police Dept.	Black	2721	103	0.04	3.80
Columbia Police Dept.	Black	4766	220	0.05	3.49
Columbia Police Dept.	Hispanic	306	17	0.06	4.20
Franklin County Sheriff's Dept.	Hispanic	95	11	0.12	5.07
Ladue Police Dept.	Black	1130	27	0.02	6.81
Missouri State Highway Patrol	Hispanic	6878	431	0.06	4.66
North Kansas City Police Dept.	Hispanic	426	16	0.04	3.73
O'Fallon Police Dept.	Hispanic	153	36	0.24	3.04
Phelps County Sheriff's Dept.	Hispanic	118	29	0.25	4.28
Pine Lawn Police Dept.	Black	3896	11	0.00	4.79
Richmond Heights Police Dept.	Black	1828	64	0.04	4.27
Rolla Police Dept.	Hispanic	39	10	0.26	3.34

Some agencies were conducting consent searches in a quarter (0.25) of the stops of Black and Hispanic drivers.

Empower Missouri publicized the disproportions. Other advocacy groups followed. No one seemed to pay much attention. No newspaper headlines. No complaints from law enforcement. No evident move by agencies to change the way they used consent searches, but by 2020 the overall disproportion against Black drivers had fallen below 1.00; White drivers more likely to be searched based on agreeing to consent.

Only Chesterfield and Richmond Heights are still on similar rankings for disproportionate use of consent searches in 2023, and their rates per stop have fallen below the statewide rate; the disproportions are high not because they are using more consent searches against Black drivers than other agencies as much as because they so seldom use them against White drivers (see the discussion below of White Privilege).

My first awareness of a breakthrough occurred when I was studying the 2015 data. Ladue Police Department reported no consent searches, after reporting 27 in 2009 for a disproportion of 6.81. Ladue still had very high stop disproportions against Black drivers based on group estimates of resident drivers because very few Blacks reside in Ladue, but on all the post-stop situations I use as alerts, LPD's disproportions had fallen dramatically from the previous year.

Chief Rich Wooten told me he was frustrated that the VSR made his officers look bad even though they were careful to treat Black drivers fairly. He blamed the driver estimates because they ignore the large number of Black drivers who come to work and shop in Ladue. He said he now instructs officers to concentrate on public safety issues—serious moving violations—and de-emphasize the high-discretion

infractions that make minority drivers feel like they have been targeted. I learned from him to emphasize the importance of officers acting on convincing facts.

Several years later, I discussed with his successor, Ken Andresky, the estimates of drivers based on residency. I suggested new calculations based on regional populations. He pointed out that the Ladue School District includes communities with much higher Black populations. The school district was a good model for the population of families that are likely to be driving in Ladue. Parents involved in school activities would also be in Ladue for other purposes. For 2018, the Black stop disproportion dropped from 16.23 using official driver estimates to 0.60 using school district estimates.

Ladue PD 2018 Stop Disproportions Based on the Population of Families Attending Ladue Schools

2018 Stops by Population Estimate		Ladue Police Dept.						
Group	Calculation	Asian	Black	Hispanic	Native American	Other	White	Total
Group Population%	Ladue School District	15.18%	14.85%	4.74%	0.26%	6.07%	58.90%	100.00%
Stops	number of incidents	80	222	12	4	43	1474	1835
Group% of Stops	grp stops/total stops	4.4%	12.1%	0.7%	0.2%	2.3%	80.3%	100.0%
Disparity Indexes	grp% of stops/grp% of Pop	0.29	0.81	0.14	0.84	0.39	1.36	
Disproportions	grp di/ white di or white di/ non-w di	0.21	0.60	0.10	0.61	0.28	2.85	

Columbia Police Department first released its internal, incident-based data for 2015. Incident-Based Data (IBD) allows rates and disproportions to be figured for combinations of categories. I documented for Chief Ken Burton that Black drivers were subjected to consent searches at a rate per stop twice that of White drivers, but White drivers were found with contraband during stops in which consent searches were conducted at a rate per search almost twice that for Black drivers. The consent search hit rate for all drivers was very low; officers found contraband in only 14% of them. When officers asked for consent, they did not appear to be basing their decisions on facts indicating criminal behavior for any group of drivers, but least so for Black drivers.

Chief Burton immediately changed the policy on consent searches, but not dramatically. Officers were ordered to tell drivers they had a right to refuse consent. In the 2016 IBD, I could tell disproportions began dropping as soon as the new policy was announced. I take the drop to indicate that officers had been distracted by racial stereotypes in their decisions to ask for consent, but when they learned that they might be committing discrimination they became more careful to make sure their facts were convincing for everyone.

The CPD consent search disproportion against Black drivers was 3.49 in 2009. Disproportions have bounced around over the years but recently have been around 1.10. In 2022 the consent search disproportion against Black drivers was 1.13, but it was kept high by the disproportions in a few Beats. In 2023, all Beats had low disproportions; the overall Black disproportion was 1.07.

The point of this historical diversion is that VSR data flag issues that can lead to reductions in disproportions against groups. Simple situations, such as consent searches have worked best because the reasons for disproportions are easier to sort out. For the process to work, the data must be

converted into rates for each group, the rates must be compared, and the comparisons publicized so that all stakeholders can see discrimination might be occurring. When these steps are followed, most officers have been willing to police themselves to be sure they are acting on facts clearly independent of race. Training on the dangers of bias is still important, and so are policies that hold officers accountable for acting on convincing facts.

Measuring Disproportion and Publicizing It

Before the first Vehicle Stops Report in 2000, objective evidence about traffic stop disproportions between groups of drivers was not available. From personal experience, many Black drivers complained that Driving While Black must be the law they were violating. From personal experience, many officers were sure they were not biased against Blacks. The first VSR documented that in 2000 Black drivers were stopped at a rate per driver 1.31 times the White rate. The disproportion reached a peak of 1.95 in 2019. In 2023 it was 1.64.

That first VSR barely mentions stop disproportions. It focused on Disparity Indexes as required by 590.650, the law that mandates the VSR. A Disparity Index (DI) compares a group's percentage of stops to its percentage of the driving population. This explanation was provided in the 2000VSR:

The first, termed the "Disparity Index," relates each group's proportion of total traffic stops to its proportion of the population age 18 and older. (Data from the 2000 census for the driving age population were not available at the time this report was produced.) A value of 1 on this index indicates that a group's proportion of traffic stops equals its population proportion; it is neither "under-represented" nor "over-represented" in traffic stops. Values above 1 indicate over-representation, and those below 1 indicate under-representation. For example, the 377,852 whites who were stopped accounted for 83% of all traffic stops.

Table 1 indicates that whites comprise 86% of Missouri's adult population. The value for whites on the Disparity Index is, therefore .83/.86, or .97.

Likewise, the Black DI in 2000 was 1.27. The 2000 Executive Summary goes on to explain:

The values on the Index for the different groups can be compared directly to one another. The likelihood that a black motorist was stopped is 1.3 times that of a white motorist (1.27/.97).

This "1.3" is as close as the VSR has ever gotten to providing a straightforward disproportion between stops rates for White and Black drivers. Black drivers were stopped at a rate per driver 1.3 times the rate for White drivers. 1.31, carried out to two decimal points. All of the work of gathering and organizing data and then everyone has to do the math to find out the point.

Here are DIs and disproportions up to 2022 and rates and disproportions for 2023.

Disparity Indexes and Disproportions, 2000-2023³

³ Data copied from the [2023 VSR](#), with disproportion added.

	VSR Disparity Indexes		
Year	White	Black	Disproportion
2000	0.97	1.27	1.31
2001	0.98	1.33	1.36
2002	0.97	1.36	1.40
2003	0.97	1.36	1.40
2004	0.97	1.34	1.38
2005	0.97	1.42	1.46
2006	0.95	1.49	1.57
2007	0.95	1.58	1.66
2008	0.95	1.59	1.67
2009	0.95	1.62	1.71
2010	0.95	1.61	1.69
2011	0.95	1.63	1.72
2012	0.96	1.57	1.64
2013	0.96	1.59	1.66
2014	0.95	1.66	1.75
2015	0.95	1.61	1.69
2016	0.94	1.65	1.76
2017	0.93	1.72	1.85
2018	0.92	1.76	1.91
2019	0.92	1.79	1.95
2020	0.95	1.63	1.72
2021	0.95	1.68	1.77
2022	0.94	1.59	1.69
	Stop Rates per 100 drivers		
2023	26.82	44.07	1.64

The VSR stopped using Disparity Indexes in 2023 it says because they can be misleading: “A community with 50% Black population cannot have a Disparity Index for Black motorists greater than two, but a community with 10% black population could have a Disparity Index as high as ten.” (Page 15)

The 2023 Executive Summary continues:

The Index has limited interpretative value when comparing communities, because driving patterns are not similar across the State. For example, drivers in a larger region that has numerous small municipalities, such as the many towns and villages in northern St. Louis County with small geographic areas, may frequently cross municipal boundaries, whereas the frequency of cross-border driving patterns is less in other regions of the State.

The problem of “cross-border driving patterns” is not related to the problems of the DI. Abandoning the DI is an important step toward transparency. but transient drivers must be accounted for by other means discussed in the Executive Summary, such as having a checkoff for residency in the jurisdiction where the stop occurred (page 4).

The 2023 VSR provides rates for summary statistics of stops, searches, contraband found, citations and arrests but no rates for detailed situations such as consent searches and no comparisons of rates at all:

2023 VSR Summary Statistics: Table 1: Rates by Race for Missouri

Table 1: Rates by Race for Missouri

	Total	White	Black	Hispanic	Native American	Asian	Other
Population							
2022 ACS pop.	4940395	3925816	535423	191155	14295	105151	285027
2022 ACS pop. %	100	79.46	10.84	3.87	.29	2.13	5.77
2020 Decennial pop.	4775612	3723642	514169	197173	18642	104558	217428
2020 Decennial pop. %	100	77.97	10.77	4.13	.39	2.19	4.55
Totals							
All stops	1367150	1053004	235979	42736	2288	14148	18995
Resident stops	684743	565766	89428	18403	837	5583	4726
Searches	61990	45701	12276	2739	92	324	858
Contraband	14757	11652	2522	446	12	51	74
Arrests	57713	43226	11326	2387	92	308	374
Citations	567793	403112	130403	21532	908	6478	5360
Rates							
Stop rate	27.67	26.82	44.07	22.36	16.01	13.45	6.66
Stop rate, residents	13.86	14.41	16.7	9.63	5.86	5.31	1.66
Search rate	4.53	4.34	5.2	6.41	4.02	2.29	4.52
Contraband hit rate	23.81	25.5	20.54	16.28	13.04	15.74	8.62
Arrest rate	4.22	4.11	4.8	5.59	4.02	2.18	1.97
Citation rate	41.53	38.28	55.26	50.38	39.69	45.79	28.22

Notes: The American Community Survey five-year population estimates for ages 16+ as of 2022 are used for Missouri. For comparison, the 2020 Decennial Census population estimates for ages 18+ are also shown in the table.

The ACS only provides race-specific Hispanic estimates for White, meaning non-White Hispanic residents are double-counted in the race percentages above.

Stop rate = (stops / 2022 population) X 100.

Stop rate, residents only = (stops by residents / 2022 population) X 100.

Search rate = (searches / stops) X 100.

Contraband hit rate = (searches with contraband found / total searches) X 100.

Arrest rate = (arrests / stops) X 100.

Citation rate = (citations / stops) X 100.

Why not do the math? Comparing 2023 stop rates, $44.07 / 26.82 = 1.64$; Black drivers were stopped at a rate per driver 1.64 times the rate for White drivers. Why not do the math for searches, contraband found, arrests and citations? Why not for the fifty subcategories of data collected?

In previous years, this table included Disparity Indexes. They are problematic, so leaving them out is a step forward, but the effectiveness of the VSR depends on a clear indication of how group rates compare, especially the Black rate compared to the White rate. No progress was made on reducing the disproportion in consent searches until a comparison was publicized, as discussed above.

Rates for all situations documented by the VSR data and comparisons of those rates are an essential starting point for public discussions leading to implementation of policies that protect public safety while protecting individual rights.

Pretext Stops and Other High-Discretion Officer Actions: another historical diversion

“Pretext stops” are mentioned in 590.650. Members of the Black Caucus thought officers might be using minor violations as pretexts to make stops to catch serious criminals. In the Executive Summary of the

first VSR in 2000, then Attorney General Jay Nixon speculated that “hot spot” patrols were the source of the disproportions:

Patrol of “hot spot” areas is an appropriate response to the well-documented fact that crime, and especially violent crime, is heavily concentrated in certain geographic areas.

Dr. David Harris observes that hot-spot patrols—“street sweeps”—work on street crime, but in order to address more sophisticated drug operations, officers need to do the hard work of building probable cause cases:

Street “sweeps,” stops and frisks, and traffic stops are all relatively easy, quick, and inexpensive. They yield results fast and don’t require extensive intelligence gathering or other investigation. In contrast, efforts to shut down more upscale drug distribution require police officers to work hard to penetrate these operations either by going undercover or using informants. This is dangerous and expensive work, consuming considerable police time and energy. Since this activity usually takes place inside homes or other structures, the police bear the additional burden of generating enough evidence through investigation to meet the probable cause standard, and jumping through the hoops necessary to obtain a warrant. The cost structure is reversed from the street-arrest model: the innocent public likely bears little or no cost, and the police must absorb a lot. Little wonder, then, that police officers and agencies prefer enforcement in areas in which drug sales are out in the open.⁴

The decision to concentrate officer patrols in areas where Black drivers are concentrated could easily be influenced by stereotypes of Black criminality. The crime rate becomes another pretext, like the pretext of a minor violation used by patrol officers, but this one used by command staff.

[Dr. Lori Fridell](#), national expert on “bias-free policing,” says agencies are justified in concentrating patrols where there are high crime rates, but they need to be careful to document the crime rates so that they have proof that the patrols are necessary to protect public safety:

Data-Driven Approaches to Crime and Traffic Safety (DDACTS) ... “integrates location-based traffic crash, crime, and calls for service and enforcement data to establish effective and efficient methods for deploying law enforcement resources” (National Highway Traffic Safety Administration 2014, p. ii). If implemented in accordance with guidelines, there is little danger of bias in terms of the selection of geographic areas to receive attention; but, to avoid bias at the officer-implementation level, DDACTS agencies need to attend to the directions they give officers assigned to these areas; ... they need to stop what Susan Herman, the NYPD Deputy Commissioner for Collaborative Policing, calls “unfocused, massive enforcement efforts” (Obbie, 2015). These unfocused activities produce a risk of biased application—where the targets become populations and not behavior.⁵

If the criminal activity documented is speeding in a school zone, then, of course, patrol the school zones, stopping drivers who speed. If the crime is distribution of illegal drugs, will stopping drivers for traffic violations in areas where drug dealing is known to take place catch the criminals? If an agency thinks outsiders are coming to the jurisdiction to commit robberies, will hot-spot patrols on the routes they

⁴ Harris David A. (2002) *Profiles in Injustice: why racial profiling cannot work*. The New Press. New York. Pages 89-90.

⁵ Fridell, Lorie. (2017) *Producing Bias-Free Policing: A Science-Based Approach*. Switzerland: Springer International Publishing. Page 84.

take catch them? Or will the stops just alienate people coming to work and shop, people whose help officers need to build probable cause cases against criminals?

The Catch 22 is that hot-spot patrols result in many innocent drivers being stopped with little opportunity to demand justice for discrimination. In *Pulled Over*, University of Kansas professors found that in a survey of 3000 drivers and officers in the Kansas City area Black drivers object most to stops that do not involve a clear public safety reason. They reported being stopped for a minor violation that could have been ignored, then instead of explaining a threat to public safety the officer asks how they can afford such a nice car, and finally intimidates them into consenting to a search. Professors Epp, Maynard-Moody and Haider-Markel say:

White drivers evaluate stops in relation to whether they were given a ticket or let off with a warning; they prefer the latter. African American drivers evaluate stops by whether the reason was criminal investigation or traffic-safety enforcement; they regard the latter as more fair and therefore legitimate. While both white and African American drivers evaluate a stop more positively if the officer is polite and respectful, these other considerations—for whites, the outcome; for blacks, the investigatory intrusion—are equally important.⁶

No action is taken against them so they do not appear in court so no judge hears their complaint. Complaints against agencies seldom result in satisfaction. If the stop for a minor violation results in evidence of a serious crime, then the judge ignores the discriminatory tactic of targeting a population

Improvements in information collected for the VSR over the years generally confirm Nixon's speculations about hot spot patrols as at least one factor involved in stop disproportions. A pattern in the data suggests non-resident Black drivers entering jurisdictions that are commercial centers account for a big chunk of the statewide Black stop disproportion.

Disproportions in stops of non-resident Black drivers in these jurisdictions flag the possibility of discrimination, but discrimination can only be identified by getting to the level of the facts officers knew when they took specific actions. According to the Fourteenth Amendment, officers must apply the same evidentiary standards to everyone and according to the Fourth Amendment "unreasonable searches and seizures" are unconstitutional--the evidence for stops ("seizures") and searches must be reasonable.

Judges have had more to say to officers about reasonable stops than about equal protection. In the 1968 [Terry v Ohio](#) case, by the Supreme Court ruled reasonable means officers must be able to cite facts to support a brief, pat-down search to make sure a suspect does not have a dangerous weapon. Justice Warren wrote, "...the police officer must be able to point to specific and articulable facts which, taken together with rational inferences from those facts, reasonably warrant that intrusion." (page 21)

I agree with Justice Douglas's warning that "specific, articulable facts" would be reduced to suspicions: "The term 'probable cause' rings a bell of certainty that is not sounded by phrases such as 'reasonable suspicion.'" (Page 37) If judges had held officers accountable for citing real facts, pretext stops and other

⁶ Epp, Charles R.; Maynard-Moody, Steven; Haider-Markel, Donald P. (2014-04-04). *Pulled Over: How Police Stops Define Race and Citizenship* (Chicago Series in Law and Society) University of Chicago Press. Kindle Locations 2420-2423 See also pages 127-133 for a discussion of perceptions of legitimacy. See also the similar discussion in [Beyond Profiling: The Institutional Sources of Racial Disparities in Policing](#)

high-discretion actions would not have been used excessively, leading to disproportions against groups vulnerable to discrimination.

According to the [Supreme Court's Whren](#) decision even the most minor violation is probable cause for a traffic stop that would not have been made except as a pretext for investigation.

[The Rodriguez decision](#) limits officer discretion in one situation. It said that officers cannot detain drivers long enough to call for a dog to sniff for drugs unless they can cite more evidence than that required for the initial stop. They must cite additional reasonable evidence to support the investigation. As discussed below, disproportions against Black drivers in drug-dog alert searches declined sharply after Rodriguez.

Officers who stop drivers in hotspot patrols might be acting on probable cause evidence applied equally to everyone they stop, but their commanding officers might be assigning patrol areas based on public safety facts that are not applied equally to everyone.

End pretext

Stop Disproportions: a first look at the data

Here's what the VSR dataset ⁷ looks like once I have organized it in a spreadsheet with almost 4000 rows for the more than 500 agencies, each with 6 groups of drivers and about 75 columns for the categories of checkoffs and their rates and disproportions:

⁷ Information provided by the Attorney General's office as the complete dataset for the 2023 VSR. I compute rates and disproportions for all categories of information gathered for the VSR. Tables for all agencies and tables used to analyze the data are available on my website: [Love the Missouri Vehicle Stops Report](#).

Table 1: Master Spreadsheet Example

VSRdata 2023 Master SS 6 18 24					
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Rate per Driver	Disproportion: Non-W Rate / White
Filters					
Cole County Sheriff's Dept	Asian	841	18	0.021	0.39
Cole County Sheriff's Dept	Black	6876	416	0.061	1.10
Cole County Sheriff's Dept	Hispanic	1574	127	0.081	1.46
Cole County Sheriff's Dept	NativeAm	85	4	0.047	0.85
Cole County Sheriff's Dept	Other	2192	28	0.013	0.23
Cole County Sheriff's Dept	White	50944	2806	0.055	0.91
Cole County Sheriff's Dept	Total	61878	3399	0.055	
Columbia Police Dept	Asian	6488	88	0.014	0.48
Columbia Police Dept	Black	10749	1443	0.134	4.77
Columbia Police Dept	Hispanic	3830	114	0.030	1.06
Columbia Police Dept	NativeAm	144	19	0.132	4.68
Columbia Police Dept	Other	5845	37	0.006	0.22
Columbia Police Dept	White	79836	2249	0.028	0.21
Columbia Police Dept	Total	104869	3950	0.038	

Statewide, Black drivers are stopped at a rate per estimated driver-age resident 1.64 times the rate for White drivers:

Table 2 2023 Statewide Stops

2023 VSR Statewide Disproportions		Spreadsheet				VSR 2023 PT Statewide 6 18 24		
Group		Asian	Black	Hispanic	Native Am	Other	White	Grand Total
Population	VSR ACS 2022	105,151	535,423	191,155	14,295	285,027	3,925,816	4,940,395
Total Stops	Count	14,148	235,979	42,736	2,288	18,995	1,053,004	1,367,150
Rate per Driver	Rate Per Driver	0.13	0.44	0.22	0.16	0.07	0.27	0.28
Disproportion: Non-W Rate /	NW/W or W/B	0.50	1.64	0.83	0.60	0.25	0.61	
Resident Stops Only	Count	5,583	89,428	18,403	837	4,726	565,766	684,743
Rate per Driver	Rate Per Driver	0.05	0.17	0.10	0.06	0.02	0.14	0.14
Disproportion	NW/W or W/B	0.37	1.16	0.67	0.41	0.12	0.86	
Non-Resident Stops Only	Total Minus Resident	8,565	146,551	24,333	1,451	14,269	487,238	682,407
Rate per Statewide Driver	Rate Per Driver	0.08	0.27	0.13	0.10	0.05	0.12	0.14
Disproportion	NW/W or W/B	0.66	2.21	1.03	0.82	0.40	0.45	

White drivers were stopped more than a million times—many more stops than Black drivers. If there were equal numbers of White and Black drivers, the difference in the counts of stops would be all that's needed for a comparison, but there are many more White drivers than Black drivers, so **rates of stops per driver need to be computed and compared.**

The Black rate per driver is $235,979/535,423=0.44$, which can be thought of as 44 stops per 100 drivers. The White rate is 27 stops per 100 drivers.

The Black rate is higher than the White rate. 44 minus 27 is 17, but subtraction doesn't take into consideration the size of the rates. 20 minus 3 is also 17. Knowing how many times one rate is greater than another is usually more helpful.

To express disproportions in these tables, Non-White rates are compared to the White rate and the White rate is compared to the Black Rate. $44/27 = 1.64$. Black drivers are stopped at a rate per driver 1.64 times the White rate. Black drivers are stopped at a rate per driver 64% greater than the White rate. White drivers are stopped at a rate 61% of the Black rate. A disproportion of 1.00 means that groups are affected at the same rate.

Disproportions depend on the accuracy of the numbers of drivers that could be stopped by officers—the drivers actually on the streets-- but these numbers are not known. They must be estimated. Originally, the VSR used statewide Census data for the numbers of driver-aged residents. Statewide estimates are fine for statewide data, but many jurisdictions have widely different group numbers.

AGs responded by using local Census data for each jurisdiction, but those estimates can be inaccurate because groups can have different driving patterns, based, for example, on access to a vehicle or availability of public transportation.

Also, **drivers do not stay in their home jurisdictions**. Many commute to work or travel for shopping, education and entertainment. A jurisdiction can have a low number of residents in one group but a high number of transients in that group. Basing the stop rate on just the residents produces misleading results.

Academics prefer to use **observational studies of drivers on the streets of a jurisdiction**, but these studies are beyond the scope of the VSR.

Regional population data can sometimes provide adequate estimates of group populations of drivers if a jurisdiction has services that attract drivers and highways provide easy access.

For instance, Clayton, the county seat of St. Louis County, has a high proportion of White residents but attracts drivers from throughout the county and from the city of St. Louis so regional group populations are likely to provide better estimates of drivers than the Clayton population.

On the other hand, Springfield and Columbia have higher proportions of Black residents than the region around them so using resident population estimates are likely to produce more accurate results.

The Missouri Census Data Center's Circular Area Profiling System ([CAPS](#)) which returns information on residents within a given radius of a location is an easy way to estimate group drivers in a jurisdiction. See the section below on using CAPS.

Since 2019, the **VSR has collected data on the ZIP Codes of drivers stopped**. A chief asked me to look at his ZIP Code data a few years ago. The information confirmed that his jurisdiction is frequently visited by outsiders. A density map would identify the main areas visitors are coming from. ZIP Codes are not very accurate indicators of residency; they often include more than one jurisdiction and areas with different demographics. Statisticians might still be able to extract reliable group driver estimates.

A practical work-around is adding **checkoffs for residents and non-residents**. Local census data should be accurate enough to compute stop rate disproportions for residents. See the discussion below for resident and non-resident drivers.

A checkoff for driver residency was added in 2019, so that law enforcement agency rates and disproportions could be figured for just the residents, providing a more dependable metric.

As an unexpected result, statewide rates and disproportions for residents disclosed that Black drivers in their home jurisdictions had much lower stop disproportions than when they were visiting other jurisdictions.

At home, Black drivers statewide were stopped at a rate per driver 1.16 times the White rate. That's low enough to suggest that it is possible to achieve bias-free policing, or at least eliminate big disproportions. But when Black drivers visit other jurisdictions they are stopped at a rate 2.21 times the White rate. Finally, the data tell us something specific about a major cause of disproportions, which means we might be able to figure out specific policy changes that protect vulnerable drivers and help officers focus on facts that are clearly independent of racial stereotypes. See more on non-resident stops below.

Post-stop situations are easier to collect information for and analyze. The rates can be per stop instead of per driver, which avoids estimates of populations. Officers are face to face with drivers and they have access to the drivers' records, so the facts officers know are clearer. High discretion actions, such as asking for consent to a search, can be used to assess possible discrimination. Because officers are not required to cite specific and articulable facts to support asking for consent they can be distracted by racial stereotypes.

Consent search disproportions against Black drivers were historically high but for the last three years White drivers have been more likely to be subjected to them. In 2023, White drivers were searched on the basis of consent at a rate per stop 1.13 times the Black rate. **See more on post-stop disproportions below.**

My conclusion is that when officers became aware that they might be distracted by racial stereotypes when they thought about asking for consent, they became more careful to examine whether the facts they knew justified their suspicions. To my mind, this is exactly what we want: officers to be aware that they can be distracted by stereotypes and to want to find reliable facts before acting.

With the help of increasingly better data and analysis, we should be able to work together to achieve fact-based policing in which disproportions are never the result of officers applying different standards to groups.

A drawback has been that the VSR has not given clear rates and disproportions for all categories of information collected. The law required the VSR to use Disparity Indexes for stop disproportions but they lack clarity. In 2023 they were dropped but no alternative was supplied. For summary statistics, the VSR gives the rates but does not give comparisons of rates. The public is left to divide 7.85 by 5.48 to find out that Black drivers are searched at a rate per stop 1.43 times the rate for White drivers. I provide rates and disproportions for all categories of data collected. See more information on Measuring Disproportions above.

Disproportions flag possible discrimination, but discrimination can be documented only by examining the facts officers base their decisions on. Do officers apply the same standards for evidence to everyone? Do the facts they know support the actions they take? Are the facts clearly independent of racial stereotypes?

Disproportions for Non-Resident Drivers

Statewide the 2022 stop rate per driver for Black drivers who do not live in the jurisdiction where they are stopped is more than twice the White rate—2.21 times greater. Drivers in their home jurisdictions are stopped at 1.16 times the rate for White resident drivers.

Table 3: Statewide Stops for Residents Outside of their Home Jurisdictions.

2023 VSR Statewide Disproportions		Spreadsheet:				VSR 2023 PT Statewide 6 18 24		
Group		Asian	Black	Hispanic	Native Am	Other	White	Grand Total
Population	VSR ACS 2022	105,151	535,423	191,155	14,295	285,027	3,925,816	4,940,395
Total Stops	Count	14,148	235,979	42,736	2,288	18,995	1,053,004	1,367,150
Non-Resident Stops Only	Total Minus Resident	8,565	146,551	24,333	1,451	14,269	487,238	682,407
Rate per Statewide Driver	Rate Per Driver	0.08	0.27	0.13	0.10	0.05	0.12	0.14
Disproportion	NW/W or W/B	0.66	2.21	1.03	0.82	0.40	0.45	
Non-Resident Stops as % of All Stops	Non-R Stops/Total Stops	61%	62%	57%	63%	75%	46%	50%

1.16 is close enough to equity that factors other than systemic discrimination, such as socioeconomic status, might explain it. But looking at the level of jurisdictions, many of them still have high disproportions which demand explanations and remediation.

White drivers are stopped at a rate of 0.14 per estimated driver at home and 0.12 when visiting. **What happens to Black drivers when they leave home and visit another jurisdiction?** 99.9% of the Black visitors are probably going to work, shop, attend church, go to school and everything else everyone does.

Knowing the source of so much of the Black stop disproportion means the possibility of discrimination can be addressed; **finally the data points to a clear source of disproportion.** Agencies must accept responsibility for investigating the stops of visitors to make sure officers are acting on facts clearly independent of race and that command staff are creating policies and procedures based on documented public safety concerns.

The source is now known because the resident checkoff added to the Vehicle Stops Report for 2020 also provides information about what happens to non-residents. The CSR as amended by AG Schmitt says officers are to have a checkoff to indicate:

Whether or not the driver resides in the jurisdiction of the law enforcement agency conducting the stop. If the jurisdictional residency status of the driver cannot be determined, the law enforcement agency may leave the field blank on the form. The number of instances in which the jurisdictional residency status of the driver could not be determined must be reported to the Attorney General. (15CSR60-10,020(2)(M))

“Whether or not” is captured in the checkoff form included in the CSR:

8 IS DRIVER A RESIDENT OF LAW ENFORCEMENT AGENCY'S JURISDICTION? ☐ Yes ☐ No

The form used by [REJIS](#) to report data to the AG, however, leaves out non-residents:

8. Driver Residence		
Residence of Jurisdiction	355	8.330%

Forms used by agencies, like the REJIS form, might not have a checkoff for non-resident. Without the non-resident checkoff, there's no way to tell that residency status could not be determined.

Table 4 in the 2022 agency reports record residents and non-residents:

Table 4: Number of Stops by Race for Mountain View Police Dept

	Total	White	Black	Hispanic	Native American	Asian	Other
All Stops	1205	1133	24	32	3	4	9
Resident Stops	348	339	3	5	0	0	1
Non-Resident Stops	857	794	21	27	3	4	8

2023 reports do not include this table. Stops for non-residents are not reported.

The agency reports do not include instances in which an agency reported that residency could not be recorded, that I have found.⁸ None, for no agencies, for any year. The Non-Resident Data appear to be just the difference between All Stops and Resident Stops: Non-resident was determined by subtraction, it appears. Data for non-residents could over-count them if drivers whose residence could not be documented were counted as non-residents.

For the state, the AG's 2021 Annual Report includes data in Table 4, page 16, that indicate resident and non-resident stops often do not sum to total stops:

	Total	White	Black	Hispanic	Native American	Asian	Other
All Stops	1226823	940468	226196	31673	2090	10897	15499
Resident Stops	275333	220195	44797	5314	386	1848	2793
Non-Resident Stops	480468	347744	109217	10121	1008	4048	8330

This 2021 information indicates residency was not identified in almost 500,000 stops. But the numbers of stops of drivers outside their home jurisdictions are still confirmed as significant; a lot of them occur.

Since 2021 Annual Report, they all have said there are potential problems in reporting in a footnote (on page 6 in the 2023 Report):

⁸

³ The analysis in the report is based on the aggregated data reported by each agency. Thus, it relies on the assumption of accuracy in the reported data in terms of the tallying of stops and resulting outcomes, the distinction between resident and non-resident drivers, etc.

For instance, a few agencies reported more resident stops than total stops in 2021, indicating problems with checkoffs or recording the data:

2021 VSR Revised Data		Resident Stops > Total Stops			
	Group	Estimate of Driver-Age Residents	All Stops	Resident Stops	Total Stops Minus Resident Stops
Agency Name	Officer Perception	VSR American Community Survey 2020	Count	Count	Total Minus Resident
			At Least 50		
Canton Police Dept	Total	2076	106	518	-412
Carroll County Sheriff's Dept	Total	7018	295	330	-35
Cedar County Sheriff's Dept	Total	11173	209	508	-299
Chaffee Police Dept	Total	2197	52	68	-16
Dunklin County Sheriff's Dept	Total	23358	197	332	-135
Ripley County Sheriff's Dept	Total	10685	126	149	-23
Versailles Police Dept	Total	2504	430	460	-30

These are small agencies reporting small numbers of stops that would not affect statewide results. They are minor clerical errors that can be caught and corrected if the AG's office helps the agencies. Agencies need more help handling data, especially small agencies. Reporting by larger agencies with more computer resources is probably more reliable but still needs to be monitored.

For 2022, the VSR says 29 agencies reported no resident stops but some stops of non-residents. Some of these are small jurisdictions that might not have stopped any residents, but several probably have data glitches.

University of Missouri-Columbia, for example, reported 3422 stops; the VSR assigns them all to non-residents. The VSR does not identify any resident population for agencies that don't have distinct jurisdictions. Most of them could use municipal or county population. Post-Stop analysis is not affected by the lack of a resident population.

Overall, I did not initially trust the resident/non-resident information enough to use it for analysis, especially because of the 500,000 driver gap mentioned above. The gap probably still exists but I'm willing to assume the information on residents is pretty good.

For more detailed analysis, agencies are supposed to send the AG the ZIP Codes provided by each driver. ZIP Codes aren't perfect for identifying the jurisdiction a driver lives in, but they should identify drivers who definitely do not live in the jurisdiction.

Someone should at least spot-check Zip Codes. I looked at them once at the request of a Chief who was using REJIS software, but we were more interested in where non-residents were coming from than whether resident/non-resident checkoffs were accurate.

For 2022, the AG's office and the VSR analysts appear to have been satisfied with accepting data on total stops and on residents and subtracting to estimate data on non-residents. We should have an explanation of why the CSR was not followed, although the results are still useful. Agencies could be required to go back to the original plan to submit both resident and non-resident data, but for the VSR's level of analysis, information on residents is enough.

When an agency looks more closely at what's happening to residents and non-residents, it can turn to its list of drivers by Zip Code, and other Incident-Based Data. 2021 REJIS data included ZIP Codes. The IBD Columbia has posted does not include ZIP Codes, but it probably has them available.

The AG's Office for the VSR analysts could also look at the ZIP Code information and at least tell us if there are significant problems with the counts or residents and non-residents.

For 2023, the VSR data includes nothing about non-residents. Only total stops and stops of residents are reported. Non-resident stops can only be estimated by subtracting resident stops from Total Stops. **Overall, however, fewer problems are obvious in the data.** Only 14 agencies reported no resident stops but some Total Stops, indicating they were paying attention to residency. Only 5 agencies reported some stops but no non-resident stops. Only one agency reported more resident stops than Total Stop; 4 stops were made of White drivers but not recorded in Total Stops.

Data glitches notwithstanding, large numbers of drivers are stopped outside of their home jurisdictions. **The break-through insight is that drivers away from home are the biggest factor contributing to the statewide Black stop disproportion.** As in other situations, stops of non-residents could be based on convincing public safety concerns. If so, agencies have a responsibility to document the facts that justify the stops.

Why are officers stopping so many out-of-jurisdiction drivers? Why is the rate for Black drivers more than twice the rate for White drivers? What public safety concern is being addressed? Are visiting drivers committing serious violations? Are they committing violent crimes? Aren't they much more likely to come to work, shop, attend school and so on? Are there ways to protect the public from the few individuals who might be a threat without pulling over so many ordinary people?

In *Producing Bias-Free Policing*, Dr. Lorie Fridell discusses the possibility that discrimination could occur when officers are concentrated in high-crime areas.⁹ High-discretion stops leave officers vulnerable to stereotypes, but if they have been trained to recognize the damage, they can check to make sure they are acting on at least "credible intelligence."

Here are agencies making more than a minimum number stops and having a high proportion of non-resident stops of Black drivers.

⁹ Fridell, Lorie. (2017) *Producing Bias-Free Policing: A Science-Based Approach*. Switzerland: Springer International Publishing. Page 83. See the section, Reduce the Risk of Bias in High-Discretion, Crime-Control-Focused Activities.

Table 4: Agencies Making more than 50% of Black Stops made of Non-Residents.

VSRdata 2023 Master SS 7 14 24							
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Non-Resident Stops Only (Total Stops - Resident Stops)	Rate per Statewide Driver	Disproportion: Non-W Rate / White Rate or W / B	Non-R Stops as % of Total Stops
Filters	Black		>2000				>50%
Chesterfield Police Dept	Black	1395	2810	2564	0.00	2.42	91%
Creve Coeur Police Dept	Black	1561	2241	2112	0.00	3.63	94%
Florissant Police Dept	Black	15811	8258	7917	0.015	31.41	96%
Grandview Police Dept	Black	7107	2255	1978	0.00	7.01	88%
Hazelwood Police Dept	Black	8416	8362	7575	0.01	21.73	91%
Independence Police Dept	Black	8968	3977	2453	0.00	3.09	62%
Lee's Summit Police Dept	Black	6242	5358	3166	0.01	2.53	59%
Maryland Heights Police Dept	Black	3301	5957	5262	0.01	6.95	88%
North County Police Cooperati	Black	184627	5915	5497	0.01	83.79	93%
O'Fallon Police Dept	Black	3441	3775	2787	0.01	2.37	74%
St Ann Police Dept	Black	2850	2993	2663	0.00	19.60	89%
St Charles County Police Dept	Black	16111	2212	1429	0.00	4.02	65%
St Charles Police Dept	Black	4046	3261	2632	0.00	6.14	81%
St Louis City Police Dept	Black	102617	16424	9593	0.02	8.97	58%
University City Police Dept	Black	9216	3220	2365	0.00	17.69	73%
Missouri State Results	Black	535423	235,979	146551	0.27	2.21	62%

These jurisdictions are in the St. Louis or Kansas City areas. They are all on routes that make visiting easy. They are either favored destinations or on the way to destinations. The disproportions are based on the statewide population, not on an estimate of the population of visitors, so they are not reliable.

The relevant information is that the stops they made of visiting Black drivers contributed to the statewide disproportion in stops of non-resident Black drivers. The agencies have a responsibility to document that there were compelling public safety concerns that led to the stops of so many visiting drivers, most of whom were contributing to the community by working or shopping.

Just looking at agencies making more than a minimum number of stops of non-resident Black drivers (2000) is useful:

Table 5: Agencies making more than 2000 stops of Non-Resident Black Drivers

VSRdata 2023 Master SS 7 14 24									
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Rate per Driver	Disproportion: Non-W Rate / White Rate or W / B	Non-Resident Stops Only	Rate per Local Driver	Disproportion: Non-W Rate / White Rate or W / B	Non-R Stops as % of Total Stops
Filters	Black					>2000			
Chesterfield Police Dept	Black	1395	2810	2.014	6.38	2564	1.84	7.49	91%
Creve Coeur Police Dept	Black	1561	2241	1.436	3.55	2112	1.35	3.78	94%
Florissant Police Dept	Black	15811	8258	0.522	5.97	7917	0.50	6.03	96%
Hazelwood Police Dept	Black	8416	8362	0.994	3.46	7575	0.90	3.71	91%
Independence Police Dept	Black	8968	3977	0.443	2.75	2453	0.27	3.56	62%
Kansas City Police Dept	Black	101144	9176	0.091	1.46	3871	0.04	1.02	42%
Lee's Summit Police Dept	Black	6242	5358	0.858	3.06	3166	0.51	3.56	59%
Maryland Heights Police Dept	Black	3301	5957	1.805	3.94	5262	1.59	4.15	88%
Missouri State Highway Patrol	Black	535423	38928	0.073	1.00	11586	0.02	1.72	30%
North County Police Cooperative	Black	184627	5915	0.032	33.38	5497	0.03	32.89	93%
O'Fallon Police Dept	Black	3441	3775	1.097	4.54	2787	0.81	5.72	74%
St Ann Police Dept	Black	2850	2993	1.050	5.45	2663	0.93	5.96	89%
St Charles Police Dept	Black	4046	3261	0.806	6.94	2632	0.65	10.02	81%
St Louis City Police Dept	Black	102617	16424	0.160	1.90	9593	0.09	1.42	58%
St Louis County Police Dept	Black	184627	14826	0.080	1.66	6566	0.04	1.29	44%
University City Police Dept	Black	9216	3220	0.349	4.17	2365	0.26	4.34	73%
Total						78609			
Missouri State Results	Black	535423	235,979	0.4407	1.64	146551	0.27	2.21	62%

The statewide disproportion against non-resident Black drivers is based on statewide estimates of drivers by group. Agency disproportions for non-resident Black drivers in this table are based on drivers living in the jurisdiction—rates per resident driver. Jurisdiction population estimates probably do not reflect the population of visitors. Using the statewide driver estimate is more accurate for some jurisdictions but not for others. Regional estimates of drivers would be better for computing stops rates and disproportions.

These agencies make a significant number of stops of Black drivers who do not live in their jurisdictions: 78,609. **If the agencies reduced the numbers of stops or documented that the stops were based on facts that are clearly independent of race, then we could say with confidence that discrimination is much less of a problem than current stop disproportions suggest.** Reducing Black stops by about 90,000 brings the overall Black disproportion to equity.

Agencies making high numbers of stops of Black visitors might have convincing public-safety reasons for concentrating stops where visitors are likely to drive. If so, they have a constitutional obligation to document the facts their patrols are based on.

Agencies need to develop the capacity to document facts in stops flagged by disproportions. They are likely to need outside help for this. Media can help by asking the right questions. Legislators need to improve 590.650, the law mandating the VSR. The Governor and AG can help with resources. Community members need to insist on fair law enforcement.

Affluent jurisdictions should be leaders in addressing stop disproportions. Civic leaders know community well-being depends on everyone's contributions. The contribution of visitors can be critical. Many jurisdictions depend on Black visitors coming to work, shop, attend school, find entertainment and so on. Black drivers who are not treated fairly will go somewhere else.

A possible explanation of the stop disproportion for visiting Black drivers is that the same drivers end up being stopped multiple times. Agencies can find this information in their internal data. Officers could be alerted that these drivers have been stopped previously and found to be valuable workers and shoppers, not criminal suspects.

Non-resident stops and investigative stops are two aspects of the same issue. To what extent should traffic stops be about traffic violations? And to what extent should concerns about public safety extend to using traffic stops as an investigative tool? Doesn't the Constitution protect us from searches without reasonable evidence? Shouldn't detectives be building probable cause cases against suspects involved in serious criminal activity? When do average drivers have a right to object to stops for minor violations?

One clear answer to these questions is that when traffic stop data document high disproportions against a protected group, the law enforcement agency has a constitutional, professional and civic obligation to document that officers are acting on facts that are clearly independent of stereotypes.

Reasons for Stops

The original legislation allowed for collection only on traffic stops for equipment, license and moving violations. In 2004, the legislature removed "traffic" in a sentence so that stops made for investigative reasons could be added.

Table 6 Reasons for Stops

2023 VSR Statewide Disproportions		Spreadsheet						
Group		Asian	Black	Hispanic	Native Am	Other	White	Grand Total
Population	VSR ACS 2022	105,151	535,423	191,155	14,295	285,027	3,925,816	4,940,395
Total Stops	Count	14,148	235,979	42,736	2,288	18,995	1,053,004	1,367,150
Reason: Equipment Violation	Count	1,438	26,997	5,319	282	2,513	139,933	176,482
Rate per Driver	Rate Per Driver	0.01	0.05	0.03	0.02	0.01	0.04	0.04
Disproportion	NW/W or W/B	0.38	1.41	0.78	0.55	0.25	0.71	
Reason: Investigative	Count	345	9,218	1,491	70	1,034	27,833	39,991
Rate per Driver	Rate Per Driver	0.00	0.02	0.01	0.00	0.00	0.01	0.01
Disproportion	NW/W or W/B	0.46	2.43	1.10	0.69	0.51	0.41	
Reason: License	Count	2,371	95,981	9,733	527	5,988	338,247	452,847
Rate per Driver	Rate Per Driver	0.02	0.18	0.05	0.04	0.02	0.09	0.09
Disproportion	NW/W or W/B	0.26	2.08	0.59	0.43	0.24	0.48	
Reason: Moving	Count	10,354	123,633	27,901	1,497	9,890	591,566	764,841
Rate per Driver	Rate Per Driver	0.098	0.231	0.146	0.105	0.035	0.151	0.155
Disproportion	NW/W or W/B	0.65	1.53	0.97	0.69	0.23	0.65	

The highest disproportion for Black drivers is for Investigative Stops. They are stopped at a rate per estimated driver 2.43 times the White rate, but not enough investigative stops are checked by officers to account for the overall stop disproportions; less than 3% of stops are checked off as investigative. More than half of stops are for moving violations, and these have a lower Black disproportion: 1.53.

Equipment violations can include defects that pose significant risks to public safety, such as driving at night with no taillights. They can also include defects that pose minimal risks, such as a burned out

license plate light. Stops for minor defects have a high degree of officer discretion, which makes officers vulnerable to the distractions of racial stereotypes.

Some agencies have had zero tolerance policies on license violations although they were widely ignored during COVID. Some agencies have devices that can read license plates and tell officers when one is expired or some other problem is associated with it.

Expired license plates might correlate with insurance lapses, making them threats to public safety. No checkoff is used for stops involving insurance problems. They would show up in reasons for warnings or citations.

Both equipment violations and license violations might correlate with economic status; individuals with low incomes might be slower to renew and repair.

For years, the VSR broke down moving violations into subcategories, such as speeding and lane violations. In 2020, the AG replaced these with subcategories of investigative stops. See the discussion of investigative stops below.

If an agency has a high disproportion against a group in one of the categories of traffic stops, it has a responsibility to document that violations occurred and that standards for violations were the same for all drivers.

Incident-Based Data (IBD) systems allow agencies to review the details of stops. Stops for minor violations might involve serious violations—a burned out turn signal bulb and a lane violation that could have caused an accident.

If an officer makes a stop without observing a violation and then discovers some serious violation has been made, such as possession of drugs, then evidence cannot be used in court, so officers usually wait to observe at least a minor violation before making a stop even if their motivation for the stop was investigative.

Stops = reasons

The problem is compounded by other agencies following the same practice. Twenty percent of agencies—106 of them—report only one reason per stop. The agencies reporting equal numbers of stops and reasons for stops might be using the MULES data collection software used by MSHP and issued by the Department of Public Safety. Here are the ones making more than 2000 stops:

VSR 2023 Master Stops and Reasons 6 19 24									
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Reason: Equipment Violation	Reason: Investigative	Reason: License	Reason: Moving	Sum of Reasons for Stops	Stops minus sum of reasons
Filters	Total		>2000						
Buchanan County Sheriff's Dept	Total	67906	3255	490	55	797	1913	3255	0.00
Callaway County Sheriff's Dept	Total	36425	2590	450	127	1062	951	2590	0.00
Cole County Sheriff's Dept	Total	61878	3399	481	47	876	1995	3399	0.00
Hannibal Police Dept	Total	13622	2798	403	159	795	1441	2798	0.00
Higginsville Police Dept	Total	4103	2053	501	0	951	601	2053	0.00
Jefferson City Police Dept	Total	34990	10124	1420	389	4170	4145	10124	0.00
Kennett Police Dept	Total	7779	3103	930	136	626	1411	3103	0.00
Missouri State Highway Patrol	Total	4940395	342787	16499	1833	86101	238354	342787	0.00
Odessa Police Dept	Total	4577	2099	403	49	996	651	2099	0.00
Potosi Police Dept	Total	2032	2963	1048	20	1180	715	2963	0.00
Riverside Police Dept	Total	3085	3644	510	24	1990	1120	3644	0.00
St Francois County Sheriff's Dept	Total	54479	2307	943	21	636	707	2307	0.00
Webster County Sheriff's Dept	Total	29743	2093	571	80	607	835	2093	0.00

Most of the agencies using MULES appear to be small, rural jurisdictions. Jefferson City PD might be acting on its own.

The federal Uniform Crime Reporting program required agencies to report just the most serious crime rather than multiple crimes in an incident. For instance, if a homicide occurred during a robbery, then a robbery would not be reported. MSHP might be applying this procedure to reasons for stops, but for stop outcomes MSHP reports multiple outcomes—citations, warnings, arrests and so on.

Of agencies reporting stops, 66 reported the same number of outcomes as stops—one per stop. Here are the ones making more than 2000 stops.

VSr 2023 Master MSHP 6 19 24					
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Sum of stop outcomes	Stops minus outcomes
			>2000		
Cape Girardeau Co Sheriff's Dept	Total	66066	3163	3,163	0
Cooper County Sheriff's Dept	Total	13619	1123	1,123	0
Jefferson City Police Dept	Total	34990	10124	10,124	0
Kennett Police Dept	Total	7779	3103	3,103	0
Moberly Police Dept	Total	10978	1681	1,681	0
Odessa Police Dept	Total	4577	2099	2,099	0
Wayne County Sheriff's Dept	Total	9207	1001	1,001	0
Webster County Sheriff's Dept	Total	29743	2093	2,093	0

Investigative Stops

In the first VSR Executive Summary, then AG Jay Nixon suggested the **high stop disproportions could be the result of officers patrolling areas with high concentrations of Black drivers**. He pointed to “hot spot patrols,” in which officers make no-tolerance stops in areas with high rates of violations, accidents, complaints, crime and so on. The concentrated patrols can be justified by data on crimes and vehicle accidents.¹⁰ They can be an important part of the agency’s effort to investigate crime, but the VSR was originally allowed to include only stops for traffic violations, not investigative stops.

In 2004 the Black Caucus succeeded in amending the law, [590.650](#), so that investigative stops were included, but investigative stops were never defined and training was not provided. **Officers have never recorded a high proportion of investigative stops—less than 3% of 2023 stops were checked off as investigative**—not enough to account for the high stop disproportions. They might just record those stops that are purely investigative, with no violation observed, but the intent was always that officers would check off all reasons involved in a stop; the check-off sheet officers are expected to use tells them to check all categories that apply.

In order to prompt officers to checkoff all of their Investigative stops, categories were added for officers following instructions from dispatch to look for specific vehicles that has been reported by the public, for officers acting on their own initiative, officers following instructions in agency bulletins to stop suspect vehicles, and other types of investigations.

Table 7: Types of Investigative Stops

2023 VSR Statewide Disproportions		Spreadsheet:						VSR 2023 PT Statewide 6 18 24
Group		Asian	Black	Hispanic	Native Am	Other	White	Grand Total
Population	VSR ACS 2022	105,151	535,423	191,155	14,295	285,027	3,925,816	4,940,395
Total Stops	Count	14,148	235,979	42,736	2,288	18,995	1,053,004	1,367,150
Reason: Investigative	Count	345	9,218	1,491	70	1,034	27,833	39,991
Rate per Driver	Rate Per Driver	0.003	0.017	0.008	0.005	0.004	0.007	0.008
Disproportion	NW/W or W/B	0.46	2.43	1.10	0.69	0.51	0.41	
Invest Stop: Call for Service	Count	74	2,511	346	22	266	7,294	10,513
Rate per Driver	Rate Per Driver	0.001	0.005	0.002	0.002	0.001	0.002	0.002
Disproportion	NW/W or W/B	0.38	2.52	0.97	0.83	0.50	0.40	
Invest Stop: Officer initiated	Count	138	3,620	700	33	262	11,896	16,649
Rate per Driver	Rate Per Driver	0.001	0.007	0.004	0.002	0.001	0.003	0.003
Disproportion	NW/W or W/B	0.43	2.23	1.21	0.76	0.30	0.45	
Invest Stop: Bulletin	Count	8	450	31	1	64	999	1,553
Rate per Driver	Rate Per Driver	0.0001	0.0008	0.0002	0.0001	0.0002	0.0003	0.0003
Disproportion	NW/W or W/B	0.30	3.30	0.64	0.27	0.88	0.30	
Invest Stop: Other	Count	133	2,692	447	19	298	7,686	11,275
Rate per Driver	Rate Per Driver	0.001	0.005	0.002	0.001	0.001	0.002	0.002
Disproportion	NW/W or W/B	0.65	2.57	1.19	0.68	0.53	0.39	

¹⁰ Fridell, Lorie. (2017) *Producing Bias-Free Policing: A Science-Based Approach*. Switzerland: Springer International Publishing. Page 83. See the section, Reduce the Risk of Bias in High-Discretion, Crime-Control-Focused Activities.

The largest number of investigative stops were based on the officer's decision. These has the lowest disproportion against Black drivers, but still one that raises concerns of discrimination.

Agency bulletins are sometimes suggested as the source of Black stop disproportions; officers are making large numbers of stops based on evidence of serious criminal activity gathered by detectives. The data do not support this idea. Calls for service have also been suggested but the numbers are much too low to affect overall stop disproportions. A Chief explained to me that officers seldom find the vehicles described in the call.

What "other" investigative stops are made. Researchers should be able to tell from the IBD of agencies. Perhaps another checkoff should be added, but still there just aren't enough investigative stops to begin to explain the disproportion against Black drivers.

Missouri State Highway Patrol has always reported reasons for stops (line 3. in the current [checkoff form](#)) that equal total number of stops. **Troopers apparently never record more than one reason for a stop, contrary to instructions to check all that apply.** This practice is common with crime data; officers are told to record the most serious crime, but different needs apply to traffic stop data. Minor violations used as pretexts for investigative stops are a high-priority interest; it's the law.

Table 8: MSHP Sum of Categories of Stop Reasons Equals Total Stops

VSRdata 2023 Master SS 7 14 24							
2023 VSR: Agency Name	Group	Total Stops	Reason: Equipment Violation	Reason: Investigative	Reason: License	Reason: Moving	Sum of Reasons
Filters							
Missouri State Highway Patrol	Asian	4,497	163	16	421	3,897	4,497
Missouri State Highway Patrol	Black	38,928	1,655	211	8,784	28,278	38,928
Missouri State Highway Patrol	Hispanic	14,749	642	115	1,993	11,999	14,749
Missouri State Highway Patrol	NativeAm	483	14	6	86	377	483
Missouri State Highway Patrol	Other	-	-	-	-	-	-
Missouri State Highway Patrol	White	284,130	14,025	1,485	74,817	193,803	284,130
Missouri State Highway Patrol	Total	342,787	16,499	1,833	86,101	238,354	342,787

Troopers could have made stops without checking any reason multiple times, but also checked reasons without checking the Stop category. It seems unlikely the totals would be equal or so close to equal for so many years unless their practice is to check only one reason.

Statewide, investigative stops were about 3% of all stops. For MSHP investigative stops were about 0.5% of all stops. Were troopers conducting much fewer investigation than other agencies or were they fail to report all stops with an "investigative desire" as instructed by the CSR?

Probably because MSHP (or the Department of Public Safety) provides data collection software, "MULES," to some agencies, more than 100 agencies appear to follow the same practices as the MSHP; they reported reasons for stops in 2023 that equaled total stops, in apparent contradiction to the AG's instruction in the [CSR](#) to check all that apply. Here are the agencies that reported more than 2500 stops and had Total Stops equal to the sum of reasons for stops.

Table 9: Agencies with large number of stops and sums of categories equal to Total Stops

VSR 2023 Master Total equals Cats 6 22 24					
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Sum of Stop Reasons (Equip, Invest, License, Moving)	Stops = Stop Reasons?
Filters			>2500		
Buchanan County Sheriff's Dept	Total	67906	3255	3255	TRUE
Callaway County Sheriff's Dept	Total	36425	2590	2590	TRUE
Cole County Sheriff's Dept	Total	61878	3399	3399	TRUE
Hannibal Police Dept	Total	13622	2798	2798	TRUE
Jefferson City Police Dept	Total	34990	10124	10124	TRUE
Kennett Police Dept	Total	7779	3103	3103	TRUE
Missouri State Highway Patrol	Total	4940395	342787	342787	TRUE
Potosi Police Dept	Total	2032	2963	2963	TRUE
Riverside Police Dept	Total	3085	3644	3644	TRUE

Perhaps these agencies report investigative stops when the investigation is the only reason for the stops, but maybe the investigation is the main reason and they fail to checkoff any observed violations. They could also be checking off minor violations that were used as pretexts but not checking off an investigative stop.

Agencies hurt themselves when they fail to record investigative stops. Investigative stops could be based on convincing evidence clearly independent of race, but with the data missing, large stop disproportions often give the impression that officers are not acting on facts but committing discrimination.

So, for instance, an officer might be dispatched because of a 911 call to look for a specific car in a specific location. The officer follows the order, observes a car fitting the description making a minor violation, then makes the stop. She checks off both the minor violation and the investigative dispatch as reasons for the stop. As long as the car is a close match for the one specified by dispatch, she is clearly performing her duties without discrimination. The officer was responding to a call for service—a 911 call—not being distracted by stereotypes.

AG Eric Schmitt amended the Code of State Regulation to include checkoffs in 2020 for categories of investigative stops: calls for service, agency bulletins, officer-initiated investigations and other investigative stops. The CSR says officers are to record an investigative intent when it was involved—an “investigative desire” (15CSR60-10.020(2)(C)1.).

“Investigative Stop” still needs a clear definition, including 911 Calls, Agency Bulletins, the pretext stops mentioned in 590.650, Terry Stops defined in the CSR, hot-spot patrols and so on. “Investigative desire” gets at this breadth of stops officers make not just on violations but with a suspicion of criminal activity. The public needs to know when investigations are involved in stops for minor violations so that officers can be held accountable for acting on adequate facts.

Following the logic of the Rodriguez decision, the minor violation is probable cause for the stop, but to insure equal protection, officers need to be held accountable for citing facts that justify an investigation.

Dr. Lorie Fridell writes of **“high-discretion, crime-control-focused activities.”** Crime control is an essential aspect of law enforcement. It involves more than acting on probable cause evidence; officers must also be alert for situations in which an investigation might find evidence, which these suspicions leave them vulnerable to the distractions of stereotypes. Dr. Fridell writes:

The point made before and reiterated here is that, barring any direction to the contrary, officers told to engage in some high-discretion activity geared toward preventing or solving crimes will, says the science [of bias], default to the demographic groups they link through stereotypes to crime and violence.¹¹

Public safety is involved as well as crime control. **School zones and construction sites are hotspots too.** Exceeding the speed limit by less than 5 mph isn’t an actionable crime in most situations but it is in a school zone. **Whatever the definition of investigative stop, it needs to be implemented with criteria officers can be trained to follow and used as performance objectives.**

The best protection for officers is for them to document the situations in which they use traffic stops to initiate investigations. That way, the documentation allows disproportions to be computed, flagging possible discrimination, and then allows a supervisor to give officers feedback on the “credible intelligence” they acted on.

But the 2020, 2021 and 2022 VSRs do not include the more detailed information on investigative stops. Perhaps agencies had problems collecting and reporting the information in the first years, but it’s included in the 2022 data set the AG shared with me.

Agencies using the [REJIS](#) software had the checkoffs available starting in 2020. Columbia PD’s Incident-Based Data includes the subcategories of investigative stops, plus even more detailed checkoffs for 2022. There are large disproportions against Black drivers in investigative stops in Columbia but not enough investigative stops are checked off to begin to account for the disproportions.

Overall, in 2020, reports of Investigative Stops declined more than a third, although the addition of just the Calls for Service not previously reported could have led to a large increase. In 2021, Investigative stops increased more than 10%:

¹¹ Fridell, Lorie. (2017) *Producing Bias-Free Policing: A Science-Based Approach*. Switzerland: Springer International Publishing. Page 83. See the section, Reduce the Risk of Bias in High-Discretion, Crime-Control-Focused Activities.

2021 VSR Revised Data	Investigative Stops					
	Group	Estimate of Driver-Age Residents	All Stops	Investigation	Rate Per Driver	Disproportion
Agency Name	Officer Perception	VSR American Community Survey 2020	Count	Count	Stops / Drivers	Non-White Rate / White Rate or W Rate / B Rate
Missouri State Total	Asian	101,746	10,903	294	0.003	0.36
Missouri State Total	Black	539,111	226,062	11,687	0.022	2.70
Missouri State Total	Hispanic	176,807	31,701	1,197	0.007	0.84
Missouri State Total	Native American	19,999	2,095	88	0.004	0.55
Missouri State Total	Other	186,829	15,508	964	0.005	0.64
Missouri State Total	White	3,954,573	940,543	31,714	0.008	0.37
Missouri State Total	Total	4,979,065	1226812	45,944	0.009	

In 2022, investigative stops were down to 42,384. The complete 2022 data set from the AG's office does include the subcategories of investigative stops:

2022 Vehicle Stops Report: Investigative Stops								
Agency Group	Officer Perception	Missouri State Total						
		Asian	Black	Hispanic	Native American	Other	White	Total
Total Stops	Count	12,825	220,556	36,105	1,927	17,999	984,097	1,273,509
	Investigative	303	9,595	1,325	52	885	30,224	42,384
	Rate per Driver	0.00	0.02	0.01	0.00	0.00	0.01	0.01
	Disproportion	0.40	2.38	0.96	0.42	0.49	0.42	
Investigation Type	Call for Service	69	2,606	227	12	240	6,860	10,014
	Rate per Driver	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Disproportion	0.40	2.85	0.73	0.42	0.59	0.35	
	Criminal Bulletin	5	380	15	2	42	607	1,051
	Rate per Driver	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Disproportion	0.33	4.70	0.54	0.80	1.17	0.21	
	Officer Initiative	177	4,488	1,026	64	300	17,013	23,068
	Rate per Driver	0.00	0.01	0.01	0.00	0.00	0.00	0.00
	Disproportion	0.41	1.98	1.32	0.91	0.30	0.50	
	Other Investigative	98	2,755	400	11	310	8,945	12,519
	Rate per Driver	0.00	0.01	0.00	0.00	0.00	0.00	0.00
	Disproportion	0.43	2.31	0.98	0.30	0.58	0.43	

The subcategories sum to 46,652 so officers appear to “check all that apply,” at least in some cases.

Officers should be getting clear instructions to check off, for instance, stops involving a Call for Service as investigative. So unless the undercount of investigative stops is widespread, there are not enough to account for the Black disproportion. The disproportions are high but there are not enough of them. This is useful information: unless officers beginning checking off more investigative stops, we now know the source of the disproportions must be found elsewhere.

Some agencies have higher numbers of investigative stops. Looking just at agencies that reported the highest percentages of investigative stops, **they still do not amount to enough stops to have a large impact on Black stop disproportions.**

2022 Vehicle Stops Report				
Percentage of Investigative Stops				
Agency	Group	Total Stops		Percent of Investigative Stops
		> 100		> 10%
	Officer Perception	Count	Investigative	Investigative / Total Stops
Ava Police Dept	Total	1396	162	12%
Berkeley Police Dept	Total	1230	136	11%
Dellwood Police Dept	Total	786	162	21%
Lake Winnebago Police Dept	Total	3750	1707	46%
Missouri Dept of Conservation Pr	Total	461	380	82%
St. Francois County Sheriff's Dept	Total	1695	228	13%
St. Louis City Police Dept	Total	32586	6239	19%
St. Louis County Police Dept	Total	39241	4482	11%
University City Police Dept	Total	4531	593	13%
Wentzville Police Dept	Total	7427	1403	19%

But perhaps an agency having 20% of its stops include an investigative desire is not unusual. Perhaps officers in other agencies are not checking off all their investigations. Conservation Agents are looking for wildlife violations. I wonder if they wait to observe a minor traffic violation before making a stop. Consent searches were involved in 21% of MDC stops.

I wonder why Lake Winnebago conducted so many investigative stops. Lake Winnebago is in Cass County, part of the Kansas City municipal area. Its Black residents are 3% of its population; officers reported stopping no Black residents. Officers stopped 166 Black drivers for investigative reasons. The group numbers of non-resident drivers are difficult to estimate, so rates and disproportions are not dependable. The populations of Cass County or Kansas City could be used as estimates. Out of 355 stops of Black drivers, 310 were made on a state highway. They could have been visitors coming to work or shop or for recreation. Or perhaps they were just driving through Lake Winnebago. Did officers have convincing reasons to want to investigate these visitors? Or were they alienating ordinary people whose cooperation they need?

So, for instance, in Wentzville, **leaving out Black investigative stops leads to a reduction in the Black stop disproportion from 2.92 to 2.59.** Investigative stops can contribute to stop disproportions but, **according to 2022 data, there aren't enough of them to account for the disproportions.**

Is there reliable research on the proportion of stops officers make with an investigative desire? Perhaps someone has studied the data somewhere. How many Black stops might be investigative in Missouri? There would need to be 90,000 of them to account for the entire stop disproportion; subtracting 90,000 from Total Stops eliminates the Black disproportion:

2022 Vehicle Stops Report: Black Investigative Stops - 90,000								
Agency		Missouri State Total						
Group	Officer Perception	Asian	Black	Hispanic	NativeAme	Other	White	Total
VSR Estimate of Driver-Age Residents		101,636	535,276	183,165	16,570	238,513	4,018,782	4,910,777
Total Stops	Count	12,825	220,556	36,105	1,927	17,999	984,097	1,273,509
	Rate per Driver	0.13	0.41	0.20	0.12	0.08	0.24	0.26
	Disproportion	0.52	1.68	0.80	0.47	0.31	0.59	
Investigative	Count	303	9,595	1,325	52	885	30,224	42,384
	Rate per Driver	0.00	0.02	0.01	0.00	0.00	0.01	0.01
	Disproportion	0.40	2.38	0.96	0.42	0.49	0.42	
Black Stops Reduced by 90,000	220,556 - 90,000		130,556				984,097	
	Rate per Driver		0.24				0.24	
	Disproportion		1.00					

Even if 90,000 investigative stops were documented, documentation would still be needed that the investigations were based on specific and articulable facts—facts similar to those necessary to support calling a drug dog under the Rodriguez ruling. Similar to the declines of Black disproportions for Drug-Dog Alert Searches and Consent Searches, declines would occur in individual agencies as new criteria are developed and implemented for when an investigative stop is acceptable, given the history of suspicion against Black drivers.

If agencies and officers follow the VSR regulations on checkoffs in 2023, there might be many more investigative stops recorded, perhaps enough to account for a significant proportion of the large statewide stop disproportion against Black drivers. **Agencies will still have to document that officers had convincing reasons to conduct investigations**—that the crime investigated wasn't Driving While Black.

Then the next question becomes how many investigative stops are too many? Shouldn't the vast majority of traffic stops be for driving that imperils drivers and others? Stopping large numbers of average drivers on the pretext of a minor violation because a handful of people are committing violent crimes is counterproductive. **The innocent drivers interpret the pretext stops as illegitimate and deny officers the trust and cooperation the officers need to stop violent crime.**

Estimating Group Driver Populations with CAPS

The VSR does not report driver estimates for jurisdiction that do not have specific geographic boundaries, such as colleges. Driver estimates for the jurisdictions they are located in, such as the University of Missouri is in Columbia.

The North County Police Cooperative covers nine communities in St. Louis County: Dellwood, Pine Lawn, Wellston, Vinita Park, Hanley Hills, Velda Village Hills, Flordell Hills, Beverly Hills, and Uplands Park. Driver estimates are not provided in the VSR but CAPS returns these populations:

Circular Area Profiles (CAPS)--2020		
6-Mile Radius of Vinita Park	Population	%
White alone	152,477	44.8
Black or African American alone	135,835	39.9
American Indian and Alaska Native alone	1,130	0.3
Asian alone	20,587	6
Native Hawaiian and Other Pacific Islander alone	110	0
Some other race alone and two or more races	30,172	8.9
Total	340,311	100

CAPS Population Estimates within 6 miles of Cool Valley		
White alone	121,644	31.9
Black or African American alone	214,574	56.3
American Indian and Alaska Native alone	1,200	0.3
Asian alone	14,554	3.8
Native Hawaiian and Other Pacific Islander alone	121	0
Some other race alone and two or more races	28,857	8
Total	380,950	100

Using 2020 Census Data.

Also Ladue, Des Peres and so on

Post-Stop Actions: Drug-dog Alert Searches

Stops are difficult to interpret because so many factors are involved in officer decisions and rates and disproportions must be based on estimates of group drivers officers encounter on their patrols. Post-stop situations often involve one specific action, such as calling for a drug dog, and rates and disproportions can be based on group stops.

Table 10: Drug-Dog Alert Searches

2023 VSR Statewide Disproportions		Spreadsheet:				VSR 2023 PT Statewide 6 18 24		
Group		Asian	Black	Hispanic	Native Am	Other	White	Grand Total
Population	VSR ACS 2022	105,151	535,423	191,155	14,295	285,027	3,925,816	4,940,395
Total Stops	Count	14,148	235,979	42,736	2,288	18,995	1,053,004	1,367,150
Drug-Dog Alert	Count	-	226	63	2	18	2,043	2,352
Rate per Stop	Rate Per Stop	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Disproportion	NW/W or W/B	0.00	0.49	0.76	0.45	0.49	2.03	

Rates for post-stop situations are more dependable than rates for stops because they can be based on numbers of stops instead of on estimates of drivers by group. Post-stop situations are generally easier to understand because fewer variables are involved. The officer has been face to face with the driver and has usually done a records check. The facts involved in the stop have been identified. The officer is deciding things like whether to give a warning or write a citation. Often the officer has considerable discretion in what to do.

Officers used to exercise high discretion in calling for a drug-dog to sniff for contraband. Counts, rates and disproportions have varied over the years of the VSR:

Large Agency Post-stop Disproportions					
Comparisons by year of the largest agencies.	Year	Race	Drug-Dog Alert Searches	Drug-Dog Rate	Drug-Dog Disproportion
2017, 2016, 2015, 2014, 2013, 2009, 2001			count	grp incidents / grp stops	minority rate / white rate
Missouri State Totals	2001	Black	122	0.0006	0.94
Missouri State Totals	2009	Black	282	0.0009	1.57
Missouri State Totals	2013	Black	368	0.0013	1.20
Missouri State Totals	2014	Black	380	0.0012	1.08
Missouri State Totals	2015	Black	384	0.0014	1.07
Missouri State Totals	2016	Black	442	0.0016	1.03
Missouri State Totals	2017	Black	440	0.0015	0.99
Missouri State Totals	2018	Black	464	0.0016	0.86

In 2015, the overall state disproportion was moderate but some agencies conducting more than 5 drug-dog alert searches had high disproportions against Black drivers:

2015 VSR: Drug Dog Alert Searches					
Police Department	Group	Total Stops	Drug-Dog Alert Search	Rate: searches per driver	Disproportion
	Black		>5		
Columbia Police Dept.	Black	3348	25	0.007	1.53
Grandview Police Dept.	Black	4773	8	0.002	1.09
Jackson County Sheriff's Dept.	Black	2521	7	0.003	0.78
Joplin Police Dept.	Black	1152	29	0.025	2.13
Kansas City Police Dept.	Black	46392	7	0.000	1.29
Lee's Summit Police Dept.	Black	2770	46	0.017	2.01
Maryland Heights Police Dept.	Black	4765	14	0.003	0.45
Missouri State	Black	275081	384	0.001	1.07
Missouri State Highway Patrol	Black	34447	52	0.002	1.96
Sikeston Police Dept.	Black	868	10	0.012	#DIV/0!
Springfield Police Dept.	Black	2560	12	0.005	3.69
St. Louis County Police Dept.	Black	20198	16	0.001	1.62

Ste. Genevieve Co. Sheriff's Dept.	Black	410	6	0.015	3.84
Velda City Police Dept.	Black	1052	23	0.022	3.32
Wellston Police Dept.	Black	655	11	0.017	#DIV/0!

Wellston and Sikeston conducted no DDA searches for White drivers so the disproportion is high, although division by zero is not defined.

The statewide disproportion against Black drivers has continued to fall, to 0.69 in 2022; White drivers were searched at a rate 1.45 times the Black rate.

2022 Vehicle Stops Report	Agencies with more than 5 Black Drug-Dog Alert Searches					
Agency	Group	Population	Total Stops			
	Black			>5		
	Officer Perception	2021 ACS estimate of driver-age residents	Count	Drug-dog Alert	Rate Per Stop	Disproportion
Arnold Police Dept	Black	80	369	7	0.019	0.71
Butler County Sheriff's Dept	Black	2000	33	6	0.182	5.93
Cape Girardeau Police Dept	Black	3949	1216	12	0.010	1.86
Columbia Police Dept	Black	11000	2007	14	0.007	0.76
Greene County Sheriff's Dept	Black	7500	1485	6	0.004	0.72
Joplin Police Dept	Black	1364	784	8	0.010	3.50
Kennett Police Dept	Black	1181	606	6	0.010	1.31
Missouri State Highway Patrol	Black	535276	39302	42	0.001	1.30
Missouri State Total	Black	535276	220,556	336	0.002	0.69
Platte County Sheriff's Dept	Black	5350	1694	7	0.004	2.04
St. Charles Police Dept	Black	3667	2903	7	0.002	0.46
University City Police Dept	Black	9667	3102	61	0.020	2.68

Table xx More than 5 Drug-Dog Alert Searches

VSRdata 2023 Master SS 7 14 24						
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Drug-Dog Alert	Rate per Stop	Disproportion: Non-W Rate / White Rate or W
Filters	Black			>5		
Boone County Sheriff's Dept	Black	12779	2973	7	0.0024	0.34
Cape Girardeau Police Dept	Black	4054	1301	8	0.0061	9.34
Clay County Sheriff's Dept	Black	12541	1800	9	0.0050	0.31
Columbia Police Dept	Black	10749	1443	17	0.0118	0.95
Greene County Sheriff's Dept	Black	7787	1548	6	0.0039	0.51
Jefferson City Police Dept	Black	6106	3178	8	0.0025	1.27
Jbplin Police Dept	Black	1165	1172	6	0.0051	2.04
Missouri State Highway Patrol	Black	535423	38928	41	0.0011	1.39
St Charles Police Dept	Black	4046	3261	7	0.0021	0.75
Ste Genevieve Co Sheriff's Dept	Black	283	532	6	0.0113	1.13
University City Police Dept	Black	9216	3220	8	0.0025	1.73
Missouri State Results	Black	535423	235,979	226	0.0010	0.49

Some agencies conducting DDA Searches continue to have high disproportions, but most of them have declined.

In 2022, officers continued to use DDA Searches as a tool to control serious criminal activity; the number of DDA searches has increased from 2079 in 2015 to 2613 in 2022. Searches of Black drivers are down only from 384 to 336.

2022 Vehicle Stops Report	Drug-Dog Alert Searches				
Agency	Group	Total Stops			
	Black				
	Officer Perception	Count	Drug-dog Alert	Rate Per Stop	Disproportion
Missouri State Total	Asian	12,825	5	0.00	0.18
Missouri State Total	Black	220,556	336	0.002	0.69
Missouri State Total	Hispanic	36,105	87	0.00	1.09
Missouri State Total	NativeAmer	1,927	2	0.00	0.47
Missouri State Total	Other	17,999	13	0.00	0.33
Missouri State Total	White	984,097	2,170	0.00	1.45
Missouri State Total	Total	1,273,509	2,613	0.00	

A big factor has been the 2015 [Rodriguez decision](#). The Supreme Court, in the opinion written by Ruth Bader Ginsberg, ruled that officers must cite "independently supported reasonable suspicion" in order to call for a dog to detect evidence of a crime. If the officer hadn't acted on "reasonable" facts, the judge would not allow the results of the search to be used as evidence in court.

Officers became much more careful to check their facts before calling for a drug dog. Columbia Police Department developed criteria for the facts needed. Officers are now required to get approval of their facts from a supervisor before allowing the dog to be called. Other agencies probably have similar policies.

Are agencies with high disproportions requiring officers to cite "independently supported reasonable suspicion"? The disproportions do not prove they are applying different standards to Black drivers—committing discrimination—but the disproportions flag possible discrimination.

I take the statewide decline in drug-dog alert search disproportions to indicate that officers are affected by stereotypes, but they are not acting out of animosity toward Black drivers. The disproportions are caused by a lower-grade bias—implicit or unconscious bias in which officers are not aware that they are responding to stereotypes. **When they become aware of the implicit bias, they can control it by looking for facts**, as explained by Stanford professor Dr. Jennifer Eberhart: [How racial bias works — and how to disrupt it](#).

The pattern I see here is that when officers are aware that their actions have a disproportional effect on a group, and they are trained in the criteria necessary to support reasonable suspicion, disproportions will decline to the point that they no longer raise concerns about systemic discrimination. A few officers will still act without reasonable suspicions and a few agencies will have high disproportions, but law enforcement will be able to regain the trust and cooperation needed to prevent serious criminal activity.

"Reasonable suspicion" echoes the ruling in [Terry v Ohio](#). "Suspicion" was used there to paraphrase "specific and articulable facts" (page 21), and one justice warned against the danger of telling officers they could act on suspicion. Specific facts defined by clear criteria are critical for helping officers control implicit biases.

DDA Searches raise questions beyond scope of VSR, but agencies should be able to access information to answer them. Most agencies collect information as "incident-based data" (IBD) in which everything an officer checks off about a stop is in one record or one row in a spreadsheet. As the Missouri Vehicle Stops Annual Report explains, its data is in "aggregate" form, in which totals for groups are reported, such as total Black DDA searches and total contraband found, so it's impossible to tell how often contraband was found in a DDA search. But in IBD, hit rates for DDA searches can be computed.

Here is part Columbia PD's IBD¹² filtered to show stops in which DDA searches were conducted:

¹² [CPD Data, Reporting & Forms - Web Page - City of Columbia Missouri \(como.gov\)](#)

Stop ID	Street	Stop Time	Beat	Race	Resident YN	Sex	Age	Consent Srch	Odor Srch	Odor Alc Srch	Odor Marij Srch	Odor Other Srch	Drug Dog Alert Srch	Incident to Arrest Srch	Inventor y Srch	No Search (not used)	Other Reasn Srch	Pln Vw Srch	Cont Reas Susp Srch	Alcohol Fnd	Currency Fnd
2022053149	PARIS RD/HATHMAN PL	3/8/2022 15:04	40W	W	Y	M	18-29	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2022145738	PARIS RD/WHITE GATE DR	6/26/2022 2:14	40W	W	Y	M	18-29	0	0	0	0	0	0	1	0	0	0	0	0	1	0
2022188951	CREEKWOOD PKWY/CLARK LN	8/15/2022 15:32	40W	W	Y	M	30-39	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2022210110	1900 E BUSINESS LOOP 70	9/8/2022 12:08	40W	B	Y	M	30-39	0	0	0	0	0	0	1	0	0	0	0	0	1	0
2022227490	2402 PARIS RD	9/27/2022 22:15	40W	W	Y	M	40-64	0	0	0	0	0	0	1	1	0	0	0	0	0	0
2022246581	CLARK LN/CONNECTOR	10/19/2022 22:37	40W	B	Y	M	40-64	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2022255144	I70 W/CONNECTOR	10/29/2022 1:10	40W	W	Y	F	30-39	0	0	0	0	0	0	1	0	0	0	0	0	0	0

How often is contraband found? How often does contraband result in an arrest? How often is an arrest prosecuted? How often is a conviction made?

How often are officer requests for a drug dog overruled?

How are officers held accountable for their actions?

Do the criteria meet community standards?

DDA searches might be irrelevant in 2023 data because most dogs have been trained to alert for marijuana.

Consent Searches

Table 4 Consent Searches

2023 VSR Statewide Disproportions				Spreadsheet:		VSR 2023 PT Statewide 6 18 24		
Group		Asian	Black	Hispanic	Native Am	Other	White	Grand Total
Population	VSR ACS 2022	105,151	535,423	191,155	14,295	285,027	3,925,816	4,940,395
Total Stops	Count	14,148	235,979	42,736	2,288	18,995	1,053,004	1,367,150
Search Conducted	Count	324	12,276	2,739	92	858	45,701	61,990
Rate per Stop	Rate Per Stop	0.02	0.05	0.06	0.04	0.05	0.04	0.05
Disproportion	NW/W or W/B	0.53	1.20	1.48	0.93	1.04	0.83	
Consent Search	Count	148	4,389	1,021	41	477	22,109	28,185
Rate per Stop	Rate Per Stop	0.01	0.02	0.02	0.02	0.03	0.02	0.02
Disproportion	NW/W or W/B	0.50	0.89	1.14	0.85	1.20	1.13	
Consent Search	Driver	148	4,389	1,021	41	477	22,109	28,185
Rate per Driver	Rate Per Driver	0.00	0.01	0.01	0.00	0.00	0.01	0.01
Disproportion	NW/W or W/B	0.25	1.46	0.95	0.51	0.30	0.69	

Many officers regard consent searches as a **basic tool** they can use to find out more about a driver, even when they don't really expect to find contraband. Asking gives them the chance to observe the driver's reaction. Sometimes they get lucky and find contraband. Then the driver's lawyer has little chance of challenging the legality of the search in court because consent was given.

Sometimes, prosecutors encourage officers to ask for consent when their probable cause evidence might be challenged in court.

Drivers, however, experience consent searches as **coercion**. Black drivers, especially, report in surveys, such as the Bureau of Justice Statistic's [Police-Public Contact Survey](#), that they have been stopped for

illegitimate reasons, while White drivers are much more likely to report being stopped for violations they knew to be dangerous to themselves and others.¹³

Black drivers say their violations were so minor they are usually ignored, then the officer shows no concern about the violation threatening public safety but instead asks insulting questions about the nice car they drive or why they are in a neighborhood, as if the officer's job were to enforce segregation. And then the officer asks for consent, which the driver doesn't think can be refused without further harassment.

In 2009, Missouri officers used consent searches on Black drivers at a rate per stop 45% higher than the rate for White drivers, but the disproportion has been falling. In 2018 Black drivers were affected at a rate per stop 1.07 times the rate for White drivers. **In 2019 the rate was 0.99; Black drivers were affected at a rate lower than the White rate.** 2020 fell another point to 0.98 where it stayed for 2021. **In 2022 it remains at 0.99.** 2023

Columbia provides a good example of the history of consent searches. 2014 VSR data documented that Black drivers in Columbia were subjected to consent searches at a rate per stop 4.39 times the rate for White drivers. The high disproportion flagged possible discrimination, but CPD took no public steps to address the issue. CPD posted **Incident-Based Data** for the first time for 2015.¹⁴ IBD allowed rates of contraband found to be computed for consent searches. Hit rates were very low for all drivers (about 20%), but Black drivers were affected by consent searches at twice the White rate, and White drivers were found with contraband at twice the Black rate.¹⁵

Ken Burton, Columbia Chief at the time, changed procedures on consent searches so that officers became more careful about how they used them; the disproportions declined and hit rates went up.

I take the statewide decline in consent search disproportions to indicate that officers are affected by stereotypes, but, as with Drug-Dog Alert Searches, they are not acting out of animosity toward Black drivers. The disproportions are caused by a lower-grade bias—implicit or unconscious bias in which officers are not aware that they are responding to stereotypes. **When they become aware of the implicit bias, they can control it by looking for facts**, as explained by Stanford professor Dr. Jennifer Eberhart: [How racial bias works — and how to disrupt it](#).

Here are some agencies with low consent search disproportions against Black drivers in 2022:

Table Low Consent Search Disproportions

¹³ See also Epp, Charles R.; Maynard-Moody, Steven; Haider-Markel, Donald P. (2014-04-04). *Pulled Over: How Police Stops Define Race and Citizenship* (Chicago Series in Law and Society) (Kindle Location 274-308). University of Chicago Press. Kindle Edition.

¹⁴ CPD first released 2015 data then later released 2014 data.

¹⁵ See [An Introduction to Columbia Police Department Traffic Stop Data](#). Page 18ff. It's on the Columbia webpage for the Chief Jones's Traffic Stop Committee.

2022 Vehicle Stops Report					
Consent Searches: low Black disproportions					
Agency	Group	Total Stops	Authority for Search		
	Black		>20		<1.00
	Officer Perception	Count	Consent	Rate Per Stop	Disproportion
Cole County Sheriff's Dept	Black	448	25	0.06	0.87
Edmundson Police Dept	Black	898	62	0.07	0.38
Florissant Police Dept	Black	9122	91	0.01	0.51
Independence Police Dept	Black	2904	37	0.01	0.60
Missouri State Total	Black	220,556	5,497	0.02	0.99
North County Police Coopera	Black	5820	143	0.02	0.36
O'Fallon Police Dept	Black	3426	93	0.03	0.99
Pine Lawn Police Dept	Black	831	61	0.07	0.21
Sedalia Police Dept	Black	637	29	0.05	0.84
Sikeston Police Dept	Black	1120	56	0.05	0.94
St. Ann Police Dept	Black	1735	40	0.02	0.95
St. Peters Police Dept	Black	1232	46	0.04	0.77
Vinita Park Police Dept	Black	2135	21	0.01	0.24
Wellston Police Dept	Black	347	41	0.12	0.45
Wentzville Police Dept	Black	1195	30	0.03	1.00

Notice that rates are per stop. Stops themselves have to be evaluated on the basis of stops per estimated driver but it's difficult to estimate the proportions of drivers that officers see in their jurisdictions. After a stop has occurred estimates aren't needed; the empirical count of stops can be used.

Notice that rates per stop vary among agencies. Some conduct twice as many per stop as the state average, demonstrating that officers can use them when they're needed for public safety reasons and still avoid disproportions.

Some agencies conduct few consent searches per stop of Black drivers but have high rates against White drivers, suggesting that officers might be **discriminating against White drivers**. It's just as likely, however, that when officers double check to make sure they know facts that justify the use of a consent search for Black drivers, they realize the facts they know are not adequate. They might be applying the same standard to everyone. The stereotype says Blacks are more likely to violate laws, but it's just a stereotype. Statewide, Black drivers were arrested for DWIs in 2022 at 93% of the White rate per driver. DWI charges have to be thoroughly documented by facts, so discrimination in them is unlikely.¹⁶ Most Black drivers know it's not safe to drive drunk and it's not safe to have contraband in their cars.

See more below on White Privilege.

¹⁶ Data on officer use of field checks and breathalyzers might reveal officers are more likely to suspect Black drivers of impaired driving.

Other agencies continue to have high disproportions. Here are those that meet the criteria of making at least 50 stops of Black drivers, at least 20 consent searches and having a disproportion of at least 2.00. The list has been getting shorter, I'm glad to report.

Table High Consent Search Disproportions

2022 Vehicle Stops Report					
High Black Consent Search Disproportions					
Agency	Group	Total Stops			
			> 20		> 2.00
	Officer Perception	Count	Consent	Rate Per Stop	Disproportion
Chesterfield Police Dept	Black	3180	53	0.02	2.97
Richmond Heights Police Dept	Black	2366	28	0.01	4.98
St. Louis City Police Dept	Black	18841	845	0.04	2.71
UCM-Dept of Public Safety	Black	240	38	0.16	2.85
University City Police Dept	Black	3102	73	0.02	2.85
University of Missouri-Columbia	Black	730	38	0.05	2.28

2023 High Consent Search Disproportions

VSRdata 2023 Master SS 6 18 24						
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Consent Search	Rate per Stop	Disproportion: Non-W Rate / White
Filters	Black			>20		>2.00
Kansas City Police Dept	Black	101144	9176	76	0.0083	2.38
Montgomery County Sheriff's	Black	179	125	33	0.264	2.53
Normandy Police Dept	Black	2595	1281	22	0.0172	2.37
Richmond Heights Police Dept	Black	651	1923	28	0.0146	3.85
Springfield Police Dept	Black	6288	2222	231	0.104	2.26
St Louis City Police Dept	Black	102617	16424	471	0.0287	2.83

VSRdata 2023 Master SS 6 18 24						
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Consent Search	Rate per Stop	Disproportion: Non-W Rate / White
Filters	Black			>30		>1.50
Chesterfield Police Dept	Black	1395	2810	41	0.0146	1.64
Joplin Police Dept	Black	1165	1172	40	0.034	1.77
Kansas City Police Dept	Black	101144	9176	76	0.0083	2.38
Montgomery County Sheriff's	Black	179	125	33	0.264	2.53
Springfield Police Dept	Black	6288	2222	231	0.104	2.26
St Louis City Police Dept	Black	102617	16424	471	0.0287	2.83
St Louis County Police Dept	Black	184627	14826	145	0.0098	1.55

VSRdata 2023 Master SS 6 18 24						
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Consent Search	Rate per Stop	Disproportion: Non-W Rate / White
Filters	Black			>10	>0.03	>1.50
Bel-Ridge Police Dept	Black	1586	404	15	0.037	4.08
Camden County Sheriff's Dept	Black	308	134	13	0.097	1.62
Joplin Police Dept	Black	1165	1172	40	0.034	1.77
Montgomery County Sheriff's	Black	179	125	33	0.264	2.53
Pike County Sheriff's Dept	Black	849	80	12	0.150	1.58
Springfield Police Dept	Black	6288	2222	231	0.104	2.26

In 2021, there were six agencies meeting these criteria. University City is the only carryover, but its disproportion has fallen from 3.70. Agencies can change officer use of consent searches quite quickly. The disproportion at the University might be caused by one officer who just needs a heads-up.

High disproportions do not prove discrimination; officer actions could be based on convincing evidence of criminal activity. Officers might have good public safety reasons to patrol areas where they are more likely to encounter Black drivers. Agencies might be able to document that officers were acting on facts, not stereotypes, when they asked for consent. If they cannot produce the documentation, they need to improve policies, training and supervision so that in the future they can document convincing facts. But if they make these improvements, disproportions against Black drivers are likely to decline because officers just need to be reminded to act on facts, not stereotypes.

Officers seem willing to respond to new policies, training and supervision that direct them to focus on facts so that stereotypes are less of a distraction. A few officers might be unable to control explicit biases. Agencies must take necessary actions. All agencies should be able to lower their disproportions, especially in relatively simple situations such as consent searches.

These tables on consent searches leave out agencies making few stops or consent searches of Black drivers. They all make at least 20 consent searches and 200 stops. A few incidents aren't enough to establish a pattern that couldn't have been the result of chance, but discrimination could still have been involved. Nine agencies conduct consent searches on more than 30% of the Black drivers they stop. One agency stopped 18 Black drivers and searched 8 of them on consent for a disproportion of 7.93. Even when results this high are not statistically significant, they still raise concerns that agencies have a responsibility to address.

The concerns raised are easy to investigate and resolve because there are so few incidents. Is the officer acting on explicit biases? Is the officer acting on specific, articulable facts? What criteria does the officer need to apply when deciding to ask for consent? Perhaps an officer needs to find another career, but there's a good chance the officers involved are rookies in small jurisdictions; a little training will resolve problems.

White Privilege

In some cases, agencies perform consent searches on Black drivers at low rates per stop compared to other agencies (set at the state average of 0.020) but still have high disproportions. The only way this situation can occur is for the consent search rate for White drivers to be super low. Here are some agencies that fit this pattern:

Table Low Consent Search Rate But High Disproportion

2022 Vehicle Stops Report						
Consent Searches with low rates against Black drivers but high disproportions						
Agency	Group	Population	Total Stops	Authority for Search		
				>10	<0.03	>1.50
	Officer Perception	2021 ACS estimate of driver-age residents	Count	Consent	Rate Per Stop	Disproportion
Chesterfield Police Dept	Black	1367	3180	53	0.02	2.97
Clayton Police Dept	Black	1218	1654	16	0.01	1.97
Frontenac Police Dept	Black	100	760	14	0.02	9.03
Jackson County Sheriff's Dept	Black	122747	1114	19	0.02	1.75
Kansas City Police Dept	Black	101137	8350	34	0.00	1.53
Platte County Sheriff's Dept	Black	5350	1694	25	0.01	1.51
Richmond Heights Police Dept	Black	703	2366	28	0.01	4.98
St. Louis County Police Dept	Black	184411	12388	174	0.01	1.75
University City Police Dept	Black	9667	3102	73	0.02	2.85

VSRdata 2023 Master SS 6 18 24						
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Consent Search	Rate per Stop	Disproportion: Non-W Rate / White
Filters	Black			>10	<0.02	>1.50
Chesterfield Police Dept	Black	1395	2810	41	0.015	1.64
Jackson County Sheriff's Dept	Black	123008	984	13	0.013	2.03
Kansas City Police Dept	Black	101144	9176	76	0.008	2.38
Normandy Police Dept	Black	2595	1281	22	0.017	2.37
Platte County Sheriff's Dept	Black	6019	1200	17	0.014	1.82
Richmond Heights Police Dept	Black	651	1923	28	0.015	3.85
St Louis County Police Dept	Black	184627	14826	145	0.010	1.55

Officers do not appear to be targeting Black drivers because the rates are below the state average of 0.02 per stop. The disproportions are high because the rates for White drivers are low. They use consent searches sparingly, and perhaps only use them when they have a good reason, **but they are seldom suspicious enough of White drivers to ask for consent.** Perhaps they should be more suspicious of White drivers, but I don't like anyone being asked to surrender Constitutional rights. I take this situation to illustrate White privilege.

White Privilege also appears to be occurring in stop disproportions. Information from the 2023 Vehicle Stops Report is filtered in this table to see law enforcement agencies which have relatively low stop rates for Black resident drivers (the statewide rate is 0.17 per Black driver), make more than 100 stops of Black residents, and have a high disproportion: resident Black drivers in these jurisdictions are stopped at a rate per estimated driver more than 3.00 times the White rate.

Low Resident Stop Rate but High Disproportion

2022 Vehicle Stops Report							
Agencies with low stop rates for Black residents but high disproportions							
Agency	Group	Total Stops			Resident Stops		
					>100	<0.20	>3.00
	Officer Perception	Count	Rate per Driver	Disproportion	Count	Rate per Driver	Disproportion
Boone County Sheriff's Dept	Black	2092	0.16	3.27	1737	0.14	3.66
Columbia Police Dept	Black	2007	0.18	4.81	1712	0.16	5.64
Dellwood Police Dept	Black	688	0.22	4.15	113	0.04	3.86
Ferguson Police Dept	Black	506	0.05	5.31	124	0.01	5.21
Florissant Police Dept	Black	9122	0.59	6.79	330	0.02	4.29
Gladstone Dept of Public Safety	Black	474	0.38	5.06	113	0.09	3.87
Greene County Sheriff's Dept	Black	1485	0.20	2.94	1317	0.18	3.08
Maryland Heights Police Dept	Black	4097	1.28	4.46	438	0.14	3.41
Mexico Police Dept	Black	140	0.24	2.30	109	0.19	3.10
St. Ann Police Dept	Black	1735	0.59	6.64	185	0.06	4.79
St. Charles County Police Dept	Black	1398	0.10	6.59	487	0.03	3.57
St. Louis City Police Dept	Black	18841	0.18	1.83	9440	0.09	3.32
University City Police Dept	Black	3102	0.32	4.86	1065	0.11	5.23

VSRdata 2023 Master SS 6 18 24						
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Resident Stops Only	Rate per Driver	Disproportion: Non-W Rate / White
Filters	Black			>100	<0.17	
Bridgeton Police Dept	Black	1832	1223	121	0.07	3.84
Clay County Sheriff's Dept	Black	12541	1800	1050	0.08	3.13
Columbia Police Dept	Black	10749	1443	1189	0.11	5.60
Ferguson Police Dept	Black	10120	1431	272	0.03	3.88
Florissant Police Dept	Black	15811	8258	341	0.02	4.80
Gladstone Dept of Public Safety	Black	1570	1071	229	0.15	3.05
St Ann Police Dept	Black	2850	2993	330	0.12	3.22
St Charles County Police Dept	Black	16111	2212	783	0.05	3.25
St Charles Police Dept	Black	4046	3261	629	0.16	3.04
St Louis City Police Dept	Black	102617	16424	6831	0.07	3.55
University City Police Dept	Black	9216	3220	855	0.09	3.74
Webster Groves Police Dept	Black	815	1152	106	0.13	3.41

Using less restrictive parameters would increase the number of agencies. Lowering the disproportion to 2.00 expands the list to 30 agencies. Resident statistics are used because the estimates of numbers of drivers are more dependable for them.

I commented above that Disparity Indexes are good for spotting agencies that might be ignoring minor violations by White drivers. The logic of the Disparity Index is that a group with 75% of the population would be expected to have 75% of the stops, all things being equal. The agencies in this table, taken directly from the VSR data shared by the AG's office, stopped White drivers less the 50% of the expected times.¹⁷

2022 VSR White Disparity Index < 0.50					<0.50
agencyname	race	totalstops	disparityindex	disparityindex_residentonly	
Bellefontaine Neighbors Police Dept	White	19	0.15	0.04	
Bertrand Police Dept	White	45	0.53	0.40	
Beverly Hills Police Dept	White	46	2.71	0.00	
Calverton Park Police Dept	White	206	0.23	0.08	
Cool Valley Police Dept	White	36	0.84	0.00	
Dellwood Police Dept	White	34	0.26	0.26	
Edmundson Police Dept	White	445	0.61	0.48	
Ferguson Police Dept	White	36	0.26	0.26	
Florissant Police Dept	White	1954	0.31	0.44	
Hayti Police Dept	White	162	0.50	0.42	
Howardville Police Dept	White	12	9.61	0.00	
St. Ann Police Dept	White	575	0.38	0.47	
University City Police Dept	White	1090	0.43	0.41	
Velda City Police Dept	White	27	1.34	0.00	
Wellston Police Dept	White	42	2.16	0.00	

Looking at DIs for all drivers provides slightly different results. The results for residents are probably more meaningful, but the disproportions by themselves flag possible problems, not prove discrimination.

¹⁷ The little boxes with funnels and active filters. They are set to see just results for White drivers and just Dis below 0.50.

2022 VSR White Disparity Index < 0.50				< 0.50	
agencyname	race	totalstops	disparityindex	disparityindex_residentonly	
Bel-Nor Police Dept	White	43	0.41	0.82	
Bellefontaine Neighbors Police Dept	White	19	0.15	0.04	
Calverton Park Police Dept	White	206	0.23	0.08	
Dellwood Police Dept	White	34	0.26	0.26	
Ferguson Police Dept	White	36	0.26	0.26	
Florissant Police Dept	White	1954	0.31	0.44	
Hazelwood Police Dept	White	2730	0.48	0.63	
Riverview Police Dept	White	8	0.33	1.17	
St. Ann Police Dept	White	575	0.38	0.47	
Sycamore Hills Police Dept	White	55	0.45	0.91	
University City Police Dept	White	1090	0.43	0.41	
Vinita Park Police Dept	White	318	0.38	0.62	

Several agencies are repeats from the list that started by looking at low stop rates for Black drivers but high disproportions. Several did not make the first list because of low numbers of stops. Remember, the data can't prove discrimination. The numbers don't have to be perfect; they are just an easy way to flag situations that might provide an opportunity to improve law enforcement.

Officers in these agencies are not making excessive stops of Black drivers, judging from the data, but the disproportion is high because the stop rate for White drivers is unusually low. Disproportions never prove discrimination; discrimination can only be proven by documenting in each stop that the officer was not applying the same standards to all drivers. But these disproportions flag the possibility that officers ignore violations committed by White drivers, which would be bias in favor of White drivers: White Privilege.

Officers might be ignoring minor violations for White drivers but making them for Black drivers. Everyone commits these minor violations—failing to signal, going 5 mph over the limit, a burned-out license light and so on. Differences in driving patterns among groups tend to be small, definitely not on the order of three-fold. The disproportions might also have more to do with actions taken by supervisors than the decisions of the officers. The officers might be assigned to patrols in which they encounter Black drivers disproportionately; do Command Staff have convincing reasons to assign officers to concentrate on one area and not another, or are they being distracted by racial stereotypes?

The disproportions are strong enough circumstantial evidence of discrimination that agencies have an obligation under the Constitution to document that officers are acting on specific and articulable facts (the Fourth Amendment) and applying the same criteria for facts to all groups (Fourteenth Amendment).

If an agency cannot document that officers (and Command Staff) are acting on convincing facts, then its jurisdiction must hold it accountable for improving policies, training and evaluation so that the disproportions approach equity.

Convincing facts are those that satisfy the community, especially vulnerable people, that the excessive stops of Black drivers are necessary to protect public safety. Without these facts, the community, especially vulnerable members, are likely to conclude that their law enforcement agency and its officers

are acting on the racial stereotypes of Whites being responsible citizens who do not need scrutiny by officers, but Blacks need to be stopped at every opportunity because they are prone to criminal activity.

If serious criminal actions are being committed by some Blacks, then law enforcement is responsible for building probable cause cases against them. Stopping large numbers of average community members because they are Black only alienates them, so that officers lose the trust and cooperation they need to obtain information.

These tables catch the agencies whose stops make the largest overall contribution to the state stop disproportion against Black drivers. Reducing their excessive stops would begin to bring the disproportion down, but all agencies need to be careful that officers are not being distracted by racial stereotypes, resulting in excessive stops of Black drivers.

Multiple factors probably affect the state stop disproportion. Another major factor seems to be agencies stopping non-residents. The recently added checkoff for driver residency makes both these analyses possible. Better information helps us understand the causes of disproportions and take steps to reduce them or mitigate unfair impact.

Perhaps this pattern of White privilege is the way bias manifests itself most frequently in our lives now. We don't feel animosity toward people who don't look like us, but we do favor those in our own groups. If we hear about a good bargain or a good job, we tend to tell people in our own group. Again, if officers focus on facts, they will be better able to avoid discrimination and favoritism.

Michelle Alexander makes a similar point in *The New Jim Crow*. After 200 pages of dissecting misguided police strategies and tactics she concludes by saying the root problem is that we don't care enough about each other. She quotes James Baldwin's letter to his nephew in which he tells the young man he must love Whites –his "younger brothers."

Odor Searches

Disproportions remain in other high-discretion situations. **The odor of drugs or alcohol was probable cause for conducting a search in 2022 but is no longer allowed under Missouri's law legalizing marijuana.** Officers could be applying different standards to different drivers.

Odors are, of course, ephemeral; they don't stay around as evidence that the officer based the search on a fact. The odor of alcohol is weak evidence of a violation; alcohol is not illegal for an adult driver. Marijuana is now legal in Missouri, with restrictions.

In 2009, Black drivers were subjected to odor searches at a rate per stop 1.79 times the rate for White drivers. Rates and disproportions have generally been up, although the disproportion was down for 2022, the final year.

Large Agency Post-stop Disproportions					
Comparisons by year of the largest agencies.	Year	Race	Drug Alcohol Odor Search	D/A Odor Rate	D/A Odor Disproportion
Select Years			count	grp incidents / grp stops	minority rate / white rate
Missouri State Totals	2001	Black	2022	0.01	1.59
Missouri State Totals	2009	Black	3309	0.01	1.79
Missouri State Totals	2013	Black	5655	0.02	2.92
Missouri State Totals	2014	Black	5628	0.02	2.84
Missouri State Totals	2015	Black	5808	0.02	2.85
Missouri State Totals	2016	Black	7263	0.03	2.93
Missouri State Totals	2017	Black	9662	0.03	3.26
Missouri State Totals	2018	Black	8607	0.03	2.76
Missouri State Totals	2019	Black	8944	0.03	2.87
Missouri State Totals	2020	Black	7147	0.03	3.03
Missouri State Totals	2021	Black	7384	0.03	2.89
Missouri State Totals	2022	Black	5861	0.03	2.71

Our use of drugs and alcohol does not vary that much across groups. Disproportions do not prove discrimination, but they flag situations in which law enforcement has an obligation to document that officers were acting on articulable facts or what Dr. Lorie Fridell calls “credible, timely intelligence.”¹⁸

Only a few agencies avoid odor search disproportions against Black drivers. Here they are, filtered to see those that made enough stops and odor searches of Black drivers to establish a pattern:

2022 Vehicle Stops Report					
Agencies with more than 10 Odor Searches and low Black disproportions					
Agency	Group	Total Stops	Authority for Search		
			>10		< 1.00
	Officer Perception	Count	Drug Odor	Rate Per Stop	Disproportion
Edmundson Police Dept	Black	898	13	0.01	0.46
Wellston Police Dept	Black	347	16	0.05	0.97

¹⁸ Fridell, Lorie. (2017) *Producing Bias-Free Policing: A Science-Based Approach*. Switzerland: Springer International Publishing. Page 36-38.

Statewide, odor searches were performed on Black drivers at the rate of 27 per 1000 stops. Edmundson officers performed the searches at a much lower rate: 14 per 1000 searches. Wellston officers do not hesitate to use them, with a rate of 46 per 1000 stops. Neither agency uses them disproportionately against Black drivers. Perhaps officers in these agencies are careful to use odor searches only when justified by convincing facts.

Many agencies continue to have extremely high disproportions, although the list is down from 19 in 2021:

High Drug/Alcohol Odor Search Disproportions

2021 VSR Revised Data	High Odor Search Disproportions				
	Group	All Stops	Drug/Alcohol Odor	Rate Per Stop	Disproportion
Agency Name	Officer Perception	Count	Count	Searches / Stops	Non-White Rate / White Rate or W Rate / B Rate
		At Least 50	At Least 20		At Least 4.50
Ashland Police Dept	Black	197	25	0.127	7.19
Boone County Sheriff's Dept	Black	2026	127	0.063	5.85
Boonville Police Dept	Black	360	20	0.056	5.22
Callaway County Sheriff's Dept	Black	256	21	0.082	4.91
Cape Girardeau Police Dept	Black	837	48	0.057	4.94
Cass County Sheriff's Dept	Black	264	27	0.102	5.03
Cole County Sheriff's Dept	Black	504	61	0.121	6.14
Frontenac Police Dept	Black	497	21	0.042	33.95
Jackson Police Dept	Black	281	22	0.078	9.00
Jefferson City Police Dept	Black	2334	107	0.046	4.71
Joplin Police Dept	Black	687	27	0.039	4.58
Kansas City Police Dept	Black	13766	79	0.006	5.27
Missouri State Highway Patrol	Black	38505	1864	0.048	4.89
Saline County Sheriff's Dept	Black	77	20	0.260	9.87
Scott City Police Dept	Black	231	35	0.152	6.81
Springfield Police Dept	Black	1477	81	0.055	5.37
St. Louis City Police Dept	Black	29323	648	0.022	5.87
St. Robert Police Dept	Black	636	22	0.035	4.86
University City Police Dept	Black	5391	89	0.017	4.91

2022 Vehicle Stops Report							
Agencies with High Drug/Alcohol Odor Search Disproportions							
Agency	Group	Population	Group % of Population	Total Stops			
	Black				>20		>4.50
	Officer Perception	2021 ACS estimate of driver	Group Pop / Total Pop	Count	Drug/Alc Odor	Rate Per Stop	Disproportion
Boone County Sheriff's Dept	Black	12717	9%	2092	58	0.03	5.89
Chesterfield Police Dept	Black	1367	3%	3180	121	0.04	4.74
Fulton Police Dept	Black	802	8%	406	21	0.05	6.35
Greene County Sheriff's Dept	Black	7500	3%	1485	44	0.03	5.48
Lake Winnebago Police Dept	Black	32	3%	355	26	0.07	5.76
Missouri State Highway Patrol	Black	535276	11%	39302	1660	0.04	4.64
Poplar Bluff Police Dept	Black	1404	11%	439	26	0.06	5.30
Richmond Heights Police Dept	Black	703	9%	2366	26	0.01	13.87
Springfield Police Dept	Black	5897	4%	1651	48	0.03	4.51
St. Louis City Police Dept	Black	105515	42%	18841	121	0.01	11.16
Ste. Genevieve Co. Sheriff's Dept	Black	156	1%	230	22	0.10	4.78
University City Police Dept	Black	9667	33%	3102	36	0.01	12.65
Wright City Police Dept	Black	286	8%	244	24	0.10	5.73

VSRdata 2023 Master SS 6 18 24						
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Drug/Alcohol Odor Search	Rate per Stop	Disproportion: Non-W Rate / White Rate or W / B
Filters	Black		>100	>5		>1.50
Boonville Police Dept	Black	676	262	7	0.0267	9.22
Frontenac Police Dept	Black	77	503	6	0.0119	1.94
Hazelwood Police Dept	Black	8416	8362	28	0.0033	2.03
Jefferson City Police Dept	Black	6106	3178	24	0.0076	2.48
Kansas City Police Dept	Black	101144	9176	44	0.0048	1.85
Lake Winnebago Police Dept	Black	39	253	6	0.0237	9.01
Lee's Summit Police Dept	Black	6242	5358	7	0.0013	4.71
Maryland Heights Police Dept	Black	3301	5957	37	0.0062	1.87
Missouri State Highway Patrol	Black	535423	38928	73	0.0019	2.65
Normandy Police Dept	Black	2595	1281	10	0.0078	2.15
O'Fallon Police Dept	Black	3441	3775	13	0.0034	1.58
Sedalia Police Dept	Black	844	517	7	0.0135	3.96
Sikeston Police Dept	Black	2898	2314	12	0.0052	1.96
Springfield Police Dept	Black	6288	2222	13	0.0059	4.16
St Louis City Police Dept	Black	102617	16424	25	0.0015	3.07
University of Missouri-Columbia	Black		937	13	0.0139	1.64

Most of these agencies use odor searches at rates per stop well above the state rate. Richmond Heights and University City officers use them at rates well below the state rate but still have a high disproportion against Black drivers because they almost never use them against White drivers.

2022 Vehicle Stops Report					
Agencies with Low Rates But High Disproportions for D/A Odor Searches of Black Drivers					
Agency	Group	Total Stops			
	Black				
	Officer Perception	Count	Drug/Alc Odor	Rate Per Stop	Disproportion
Missouri State Total	Black	220,556	5,861	0.027	2.71
Missouri State Total	White	984,097	9,635	0.010	0.37
Richmond Heights Police Dept	Black	2366	26	0.011	13.87
Richmond Heights Police Dept	White	2525	2	0.001	0.07
University City Police Dept	Black	3102	36	0.012	12.65
University City Police Dept	White	1090	1	0.001	0.08

Drug/Alcohol Odor Search Low Rates but High Disproportion

VSRdata 2023 Master SS 6 18 24						
2023 VSR: Agency Name	Group	Population from ACS 2022	Total Stops	Drug/Alcohol Odor Search	Rate per Stop	Disproportion: Non-W Rate / White Rate or W / B
Filters	Black			>1	<0.004	>1.82
Hazelwood Police Dept	Black	8416	8362	28	0.0033	2.03
Lee's Summit Police Dept	Black	6242	5358	7	0.0013	4.71
Missouri State Highway Patrol	Black	535423	38928	73	0.0019	2.65
Platte County Sheriff's Dept	Black	6019	1200	4	0.0033	3.78
St Joseph Police Dept	Black	3937	1144	3	0.0026	9.84
St Louis City Police Dept	Black	102617	16424	25	0.0015	3.07

Is it credible that officers encountered just 1 or 2 White drivers with an odor of drugs or alcohol?

A law enforcement agency might review an odor search and find that the officer observed erratic driving, pulled the driver over, and used the odor of alcohol or drugs as probable cause for a search.

Are these facts enough to justify the odor search? The odor of alcohol does not seem to me to be probable cause unless the driver was a minor.

There can be differences of opinion, but a high disproportion against a protected group makes the question more than academic. Agencies must accept responsibility for documenting facts strong enough to preclude the possibility of discrimination.

Part of the problem with odor searches is that the **VSR does not collect enough information on them** and aggregate data do not allow investigations of how categories fit together.

It would be better to separate the odors of alcohol, marijuana and other drugs. It would be better to know the outcome of each type of search instead of just the outcome of all searches that occurred in the stop—how often contraband was found in odor searches and other high-discretion searches, and whether the contraband led to an arrest or citation. That sort of analysis is can be done now with Incident-Based Data from the agency.

I doubt the efficacy of alcohol odor as probable cause for a search. The odor of alcohol plus some indication of impairment is sufficient evidence to support a field test.

IBD from Columbia indicates alcohol odor is seldom involved in odor searches. CPD has a separate checkoff for a search based on alcohol odor. Eleven of them were performed: 2 for Black drivers, 9 for White drivers. Alcohol was found in 6 of the searches; was there something illegal about the alcohol? Open container? Nine of the stops ended in DWI arrests. Why didn't the officers just test for impairment?

See more in the next section on Columbia's IBD for contraband found and arrests made in Marijuana Odor searches.

Contraband Found

The Annual Report provides a help section on Contraband Found, page 10.

DIFFERENTIAL HIT RATES

In addition to the metrics described in Table 1 above, a frequently employed proxy for bias in searches is the difference in contraband "hit rates" across groups. The logic of comparing hit rates is as follows: i) if discretionary searches are conducted for the purpose of discovering contraband, and ii) police search motorists only when they estimate that the probability of finding contraband exceeds some threshold (e.g., 30%), then unbiased search behavior will result in a hit rate that is equalized across groups, although search rates may vary across groups. For example, if one group is more likely to possess contraband, then unbiased search behavior will lead to a higher search rate for that group, until the probability of finding contraband is equalized across different groups. Consequently, differences in hit rates are an indicator of differential treatment, while differences in search rates are not necessarily an indicator of differential treatment.

Translating from scholarly talk, “unbiased search behavior” means officers are acting on facts not stereotypes. If Contraband Found rates are similar for groups, then offices are probably basing their decision to make a high discretion search on adequate facts.

In Columbia when the 2015 IBD was released, the first thing I did was compute consent search rates and hit rates for those searches. Black drivers were searched at twice the rate for White drivers, but White drivers were found with contraband at twice the rate for Black drivers. Ken Burton, then Chief, took modest steps to alert officers to the danger of discrimination, but the next year I could see Black rates and disproportions began to drop immediately.

Here's a table from my study of CPD 2021 IBD:

In 2015 Black drivers were subjected to consent searches at a rate per stop 2.01 times the White rate. Hit rates for Consent Searches were much lower, with the rate per search even lower for Black drivers:

2015 Columbia PD Incident-Based Data			
Group	Consent Searches	Contraband Found	Hit Rate
Black	208	21	10.1%
White	227	42	18.5%
Total	446	63	14.1%

Low hit rates when first documented in the newly released IBD convinced Chief Burton that officers were using consent searches unfairly, and without credible intelligence.

I doubt that officers worry enough about low hit rates to estimate a threshold of hits; when they are suspicious they will make a search if they can. Some officers, I was told by other CPD officers a few years ago, make as many consent searches as they can. In *Pulled Over*, Epp, Maynard-Moody and Haider-Markel comment on the use of high-discretion tactics:

Or, as an officer observed, in trying to find contraband by stopping and searching vehicles “you’ve got to kiss a lot of frogs before you find that one prince.” As we will observe throughout this book, the recommendation to stop lots of drivers simply in order to carry out intrusive investigations is a recipe for giving deep offense to many people.¹⁹

Instead of estimating probability or stopping as many drivers as possible on weak facts or acting on suspicions, officers need to be held accountable for acting on specific and articulable facts that are clearly independent of stereotypes.

The Annual Report goes on to raise other important points:

¹⁹ Epp, Charles R.; Maynard-Moody, Steven; Haider-Markel, Donald P.. *Pulled Over: How Police Stops Define Race and Citizenship* (Chicago Series in Law and Society) (Kindle Locations 937-977). University of Chicago Press. Kindle Edition.

The analytical benefit of differential hit rates is based on the maintained assumption that searches are discretionary. However, this is not always the case. As an example, many agencies have a policy of searching any individual being arrested for obvious reasons of officer safety and investigative integrity. Thus, a high number of arrests might skew the hit rate with non-discretionary searches. The aggregate data reported by most agencies does not allow for any distinction between discretionary and non-discretionary searches, but as more agencies report incident-level data, such a distinction will be feasible. Yet another consideration is that large differences in search rates across groups may be considered problematic even if hit rates are equalized across racial and ethnic groups, since searches are invasive. For this reason, it is useful to consider the frequency of searches alongside hit rates. Finally, because searches are relatively infrequent, a comparison of differential hit rates is not informative unless there are a sufficient number of searches conducted for each population group.

Many searches, such as “incident to arrest,” which officers must make to be sure someone in custody does not have a weapon, are based on specific and articulable facts. Just because hit rates for these non-discretionary searches are low does not mean the search should not have been made; the search was necessary for other public safety reasons.

High-discretion searches can also be necessary for public safety reasons. In the Terry decision, Supreme Court Justices ruled that officers could reasonably search a person in order to make sure no weapon was available. The officer in the case could see bulges consistent with weapons in the pockets of individuals he had had under surveillance. The principle has been expanded since that ruling. Officers are allowed to do a quick search of a car to make sure a weapon is not within reach of a driver or passenger. When the officer finds a weapon, his or her suspicion is supported, but even when a weapon is not found, the reason for the search is achieved; everyone’s safety is protected.

Notice this logic is supported even when the gun is legal. Officers will sometime have a driver put a legal gun in the trunk of a car.

In 2020, contraband was found in all types of searches at a rate per search of about 30%, which means that most of the time no contraband was found. Officers could check off when contraband was found in each type of search, that way VSR data would indicate when odor was good evidence of criminal activity. But there are limits to the checkoffs officers can be expected to make. The VSR has enough information to flag possible problems; it’s up to each agency to review incidents to make sure officers are acting on convincing facts.

The agency’s incident-based data makes these reviews easier because an initial screening can be done without looking at official records, such as a citation.

The overall hit rate was higher in 2021 and 2022: almost 40%.

2021 VSR Data								
Agency Name		Missouri State Total						
Group		Asian	Black	Hispanic	Native American	Other	White	Total
Driver Searched	Count	81	3,195	680	24	75	11,440	15,495
Rate Per Stop	Count / Stops	0.007	0.014	0.021	0.011	0.005	0.012	0.013
Disproportion	Non-White Rate / White Rate or W Rate / B Rate	0.61	1.16	1.76	0.94	0.40	0.86	
Contraband Found	Count	117	7,958	860	61	171	24,352	33,519
Rate Per Search	Hits / Searches	0.356	0.408	0.343	0.473	0.390	0.399	0.399
Disproportion	Non-White Rate / White Rate or W Rate / B Rate	0.89	1.02	0.86	1.19	0.98	0.98	

2022 Vehicle Stops Report								
Agency		Missouri State Total						
Group	Officer Perception							
		Asian	Black	Hispanic	NativeAmerica	Other	White	Total
Total Stops	Count	12,825	220,556	36,105	1,927	17,999	984,097	1,273,509
Search Conducted	Search Conducted	418	17,303	2,760	110	447	53,976	75,014
	Rate Per Stop	0.03	0.08	0.08	0.06	0.02	0.05	0.06
	Disproportion	0.59	1.43	1.39	1.04	0.45	0.70	
Contraband Found	Count	111	7,137	799	36	148	20,691	28,922
	Rate Per Search	0.27	0.41	0.29	0.33	0.33	0.38	0.39
	Disproportion	0.69	1.08	0.76	0.85	0.86	0.93	

2023 VSR Statewide Disproportions		Spreadsheet: VSR 2023 PT Statewide 6 18 24						
Group		Asian	Black	Hispanic	Native Am	Other	White	Grand Total
Population	VSR ACS 2022	105,151	535,423	191,155	14,295	285,027	3,925,816	4,940,395
Total Stops	Count	14,148	235,979	42,736	2,288	18,995	1,053,004	1,367,150
Search Conducted	Count	324	12,276	2,739	92	858	45,701	61,990
Rate per Stop	Rate Per Stop	0.02	0.05	0.06	0.04	0.05	0.04	0.05
Disproportion	NW/W or W/B	0.53	1.20	1.48	0.93	1.04	0.83	
Contraband Found	Count	51	2,522	446	12	74	11,652	14,757
Rate Per Search	Rate Per Search	0.16	0.21	0.16	0.13	0.09	0.25	0.24
Disproportion	NW/W or W/B	0.62	0.81	0.64	0.51	0.34	1.24	

Contraband was found at a rate of 0.39 per search—almost 40%. Hit rates for White and Black drivers were almost equal, **but still contraband was not found in 60% of searches.**

VSR data also do not record whether contraband was significant enough to result in an arrest or even a citation. Internal IBD data for Columbia PD indicate that contraband checked off by officers often does not result in an arrest, and that officers might be applying different standards to groups.

In 2021, Columbia officers conducted 95 consent searches of Black drivers. Contraband was found in 34 of the stops, although it could have been found in a different search. Arrests were made in 13 of the stops, although the arrests might have been made for something other than contraband found in the consent search. In other words, the hit rate of actionable contraband in consent searches was no more than 13/94, which is 0.137 or 14%. See the table below.

An examination of each stop would be necessary to determine exactly what happened but clearly contraband found does not necessarily mean the driver committed a crime serious enough to warrant an arrest.

Columbia Chief Geoff Jones asked the AG whether a trace amount of a drug should be checked off as contraband found. The AG took the question under consideration without giving an answer. The question might also be asked about a legal firearm.

Columbia Police Department 2021 Incident-Based Data: Consent Search > CF > Arrest								
Group	Officer Perception	Asian	Black	Hispanic	Native American	Other	White	Total
Category	Calculation							
Stops	Count	126	2127	151	26	39	3945	6414
Consent Searches	Count	1	95	5	0	1	123	225
Rate Per Stop	Search / Stop	0.008	0.045	0.033	0.000	0.026	0.031	0.035
Stop Rate Disproportion	Non-W / W or W / B	0.25	1.43	1.06	0.00	0.82	0.70	
CS > Contraband Found	Count	1	34	0	0	0	42	77
Rate Per Search	Contraband / Search	1.000	0.358	0.000	#DIV/0!	0.000	0.341	0.342
Stop Rate Disproportion	Non-W / W or W / B	2.93	1.05	0.00	#DIV/0!	0.00	0.95	
CS > CF > Driver Arrested	Count	0	13	0	0	0	20	33
Rate Per Search	Arrest / Search	0.000	0.137	0.000	#DIV/0!	0.000	0.163	0.147
Stop Rate Disproportion	Non-W / W or W / B	0.00	0.84	0.00	#DIV/0!	0.00	1.19	
CS > CF > Driver Arrested	Count	0	13	0	0	0	20	33
Rate Per Contraband Fd	Arrest / Contraband	0.000	0.382	#DIV/0!	#DIV/0!	#DIV/0!	0.476	0.429
Stop Rate Disproportion	Non-W / W or W / B	0.00	0.80	#DIV/0!	#DIV/0!	#DIV/0!	1.25	
2021 CPD IBD H 6 18 21								

A similar situation occurs for Marijuana Odor searches in Columbia IBD.

2022 Columbia Incident-Based Data	Marijuana Odor Searches	Black	White	Total
Stops		2007	3054	5370
Searchs	Count	418	355	800
Searches per Stop	Searches / Stops	0.21	0.12	0.15
Disproportion	Black rate / W rate; W rate / B rate	1.79	0.56	
Contraband Found (CF) Following Search	Filter	242	184	438
CF per Search	CF / Search	0.58	0.52	0.55
Disproportion	Black rate / W rate; W rate / B rate	1.12	0.90	
Arrest following CF	Filter	129	116	249
Arrest per CF	Arrest / CF	0.53	0.63	0.57
Disproportion	Black rate / W rate; W rate / B rate	0.85	1.18	
Marijuana Odor Search (MOS)	Filter	100	31	134
MOS per Stop	MOS / Stop	0.05	0.01	0.02
Disproportion	Black rate / W rate; W rate / B rate	4.91	0.20	
Marijuana Contraband Found (MCF) following MOS	Filter	72	22	97
MCF per MOS	MCF / MOS	0.72	0.71	0.72
Disproportion	Black rate / W rate; W rate / B rate	1.01	0.99	
Drug Arrest following MCF following MOS	Filter	27	4	32
Drug Arrest per MOS	Drug Arrest / MOS	0.27	0.13	0.24
Disproportion	Black rate / W rate; W rate / B rate	2.09	0.48	
Drug Arrest per MCF	Drug Arrest / MCF	0.38	0.18	0.33
Disproportion	Black rate / W rate; W rate / B rate	2.06	0.48	

The data do not indicate that contraband was found in the Marijuana Odor search; just that the search was performed and marijuana was found in a search during the stop. Similarly, a drug arrest was made during the stop but the drug might have been found in a different search.

Contraband was found in 55% of the stops in which searches were conducted. Arrests were made in 57% of the stops in which contraband was found.

Marijuana Odor searches were made in 134 stops. Black drivers were affected at a rate per stop 4.91 times the White rate.

Marijuana was found in 72% of the stops in which Marijuana Odor searches were conducted. Rates for Blacks and Whites were almost identical.

Drug Arrests were made in 24% of the stops in which MOS were conducted: 27% for Black drivers and 13% for White drivers.

Drug Arrests were made in 33% of the stops in which MOS were conducted and marijuana found: 38% for Black drivers and 18% for White drivers.

2022 rates and disproportions were similar to 2021, although in 2021 the extra checkoffs for types of odors were not available.

What do you make of the numbers?

I'm surprised arrest rates are as high as they are since possession of small amounts of marijuana in Columbia is supposed to result in only citations. I doubt the hit rates and arrest rates are high enough to justify the use being made of marijuana odor searches, especially when the disproportion against Black drivers is so high. Were arrests being made for possession of marijuana by illegal dealers? Did the arrests result in prosecutions? And convictions?

In 2022, Columbia Chief Geoff Jones all consent and odor searches would be reviewed, so we should expect a report.

Drugs and alcohol pose threats to public safety. Law enforcement needs to have the means to control use of drugs and alcohol that has been made illegal. Illegal sources of marijuana remain a problem for law enforcement. Sources of marijuana other than those approved by the amendment must be controlled, and the violence that comes with illegal markets. Other drugs pose public threats. Adulteration must be addressed.

Law enforcement cannot be expected to control illegal drugs and related violence on its own; the causes of drug abuse are rooted in educational and economic opportunities, health and mental health care and so on. Societal solutions are needed.

But still, officers are on the front line. What they do has contributed to the prison records of young Black males. Practices that are not based on facts that are clearly independent of race must be replaced with ones that are fair and effective. Odor searches do not appear to have been either from what I've seen so far.

Making the Most of VSR Data

Having **the right check offs** for the VSR helps agencies identify situations in which officers might be applying different standards to groups. Sometimes the right check offs are enough for agencies to present convincing documentation that officers are acting on facts, not stereotypes. For instance, the VSR collects information on moving violation stops but supervisors need to know what sort of violation was involved; was it a threat to public safety or something that an officer usually ignores?

Disproportions among groups in stops for exceeding the speed limit by 20 mph are unlikely to involve discrimination. Officers cannot ignore the violation no matter who commits it. If a disproportion arises for stops of drivers exceeding the speed limit by less than 5 mph, it might involve officers ignoring the violation for one group but stopping another group. A checkoff provides easy access to the information in computer data needed to do an initial check on officer performance, without having to dig through written records.

Columbia Police Chief Geoff Jones recruited volunteers for a Traffic Stop Committee; I have been a member. One of his first requests was that the committee recommend **extra checkoffs that would allow him to tell when officers are acting on acceptable “variables”—variable facts, or as he has come to say, “actionable information.”** The committee submitted a list of variables with an explanation of why they are important: [Committee Recommendations: Data “Check-Offs,” March 9, 2021](#). CPD began using the extra checkoffs in 2022.

Most larger agencies have access to internal, **incident-based data** which allows greater analysis than the VSR’s aggregate data. Sometimes agencies have to look more deeply at records such as incident reports and video recordings, but because the data flag suspect situations, often involving just a few incidents, the reviews should not be a burden.

The [Missouri Vehicle Stops Annual Report](#) has recommended in recent years that agencies make use of their incident-based data or “incident-level data.” (Page 4) The AGs would like VSR data to be reported in incident-based format in which information is grouped by stop, not totaled in “aggregate” form.

Afterall, the review of incidents flagged by disproportions might validate an officer’s actions, leading to increased community trust and cooperation. Even if the review finds that the officer would benefit from better policies, training and supervision, the agency can explain what it’s doing to achieve bias-free, fact-based policing.

The biggest weakness of the VSR has been that the **stops themselves are a challenge to analyze**, and stop disproportions are what most people focus on in the VSR. In 2022, Black drivers were stopped at a rate per driver 1.68 times the rate for White drivers, down slightly in recent years. But the disproportion is up from 1.31 in 2000 without anyone—chiefs, sheriffs, the AG, academics--being able to explain why.

The VSR’s use of Disparity Indexes compounds the problem. A Disparity Index does not give a straightforward comparison of group rates. Two agencies can have the same numbers for a Disparity Index but the numbers can carry significantly different meanings because of different group population proportions. See the AG’s explanation page 12 of the [Annual Report](#) and the discussion above.

Law enforcement officials have often dismissed the VSR as flawed but individuals vulnerable to the disproportion say it agrees with their experience. The officials are correct; the VSR does have flaws but the data are sufficient to flag situations that demand explanations. Unless officials account for the disproportions with convincing evidence, Black drivers will withhold trust and cooperation. **When the VSR fails to collect the right data or the analysis in the official reports is insufficient, local officials have to fill the gaps; they have first responsibility for providing equal protection.**

Post-stop situations, such as drug-dog and consent searches, start with empirical data on the number of stops and number of searches—no estimates are involved—so group rates per stop can be compared with confidence. But stop analysis relies on an estimate of the number of drivers in each group in a jurisdiction, which can be flawed and probably do not reflect the population of visitors.

In the past the VSR has used group proportions of drivers instead of the actual population numbers. Starting in 2019, the complete data set included proportions but also the census numbers the proportions were based on. Either way, **rates for stops per driver can be computed, but they are still affected by how good an estimate the census data is of the actual number of drivers in each group the officers encounter in their jurisdiction.** The American Community Survey, used in recent years, is more up to date than ten-year Census data required by law.²⁰ Different individuals have different access to cars. Individuals come and go between jurisdictions, so the estimates can still be flawed.

Proportions of drivers can be estimated in other ways. . I like the Missouri Census Data Center's Circular Area Profiling System ([CAPS](#)). An estimate can never be totally accurate, but stakeholders should be able agree on ones that are satisfactory.

AGs have made significant improvements in the VSR in recent years. The checkoff for whether a driver was a **resident of the jurisdiction** allows disproportions to be computed for just residents, for whom the census data is more accurate. The American Community Survey estimates of populations are more accurate than 2010 Census data being used, and maybe more accurate than 2020 data.

Checkoffs for officer assignment and driver ZIP Codes, added in 2019, provided interesting insights, but that information has been left out of the VSR and the Executive Summary, perhaps because some agencies were unable to collect the information. The information can still be used if access to IBD is available.²¹

For 2020, AG Schmitt changed the [Code of State Regulations](#) (CSR) so that agencies were required to submit data on **investigative stops**. Investigative stops were left out of the 2000 law that mandates the VSR, but they were added in 2004 because the Black Caucus wanted to know how often officers used a minor violation as a pretext to investigate a driver.

Since 2004, officers have been required to check off when they make a stop for a moving, equipment or license/registration violation, and when they make an investigative stop. They are required to **check "all that apply,"** so that if an officer investigating a 911 call waits to observe a minor moving violation before making a stop, both moving and investigative should be checked. This procedure was never explained well to agencies and officers, so most investigative stops appear to have been left unreported.

²⁰ See page 20 in the [Missouri Vehicle Stops Annual Report](#) for a discussion of the use of Census data.

²¹ See the mention on page 4 of the Annual Report.

Starting in 2020, agencies have been required to have officers check off when they make a stop in response to a **911 call, in response to an agency bulletin to watch for a suspect, and when they make an investigative stop on their own initiative or for another reason**. The information might have finally shed light on the high statewide stop disproportion against Black drivers. Perhaps it is the result of 911 calls and other investigations officers are ordered to make, which would mean officer bias is not so important as systemic bias in agency procedures. But the VSRs have not included this information and no explanation seems to have been given.

The Missouri State Highway Patrol seems to have ignored the instruction to check all that apply. Total stops equal the sum of the categories, so troopers seem to be checking just one reason. Since 2000, MSHP troopers have never checked all that apply, to the best I'm able to tell, and MSHP has not responded to my questions.

One hundred or so other agencies commit the same error. Perhaps they are all using the MULES software provided by the Department of Public Safety. Agencies often complain that the data are not accurate or complete, but they have a responsibility to follow the law, 590.650, and the Code of State Regulations.

The AG needs to guarantee the cooperation of agencies. The AG could provide a means to develop **better population benchmarks for agencies** whose resident disproportions are different from disproportions for drivers actually in their jurisdictions. The AG could relegate **Disparity Indexes** to an appendix and provide disproportions based on rates per driver, rates per stop and rates per search. The AG should provide **rates and disproportions for all categories of data**.²²

The aggregate format of VSR data limits advanced analysis, so AGs have been correct to promote use of incident-based data. Some agencies already share IBD with the AG; great use could be made by researchers to answer questions raised by the VSR. Zip Code information submitted by agencies for all drivers could help answer questions about the impact of stops on residents and non-residents.

Conclusion

Police officers have been used throughout our history to enforce laws that were intended to discriminate against Blacks. Black drivers will remain suspicious of officers for many years to come, but law enforcement can start now to establish the trust and cooperation needed from all community members.

Missouri has achieved some progress toward bias-free policing since the killing of Michael Brown. Some jurisdictions—some communities—have decided they will not tolerate discrimination in law enforcement and their efforts are beginning to show up in the data. Many affluent, conservative communities understand they need to welcome everyone or they will not thrive—they need workers, shoppers, students and so on to know they will be protected by officers, not discriminated against, not suspected as criminals.

Bias-free policing starts with the basics of officers checking facts before acting so that stereotypes do not lead to discrimination. A law enforcement culture of letting suspicions guide actions leads to unacceptable consequences because suspicions are so easily triggered by stereotypes. Even starting with

²² I provide complete rates and disproportions for data provided by the AG. It would still be good for independent researchers to perform analyses, but an official version would benefit everyone.

a reform of the use of consent searches can begin to change an agency's culture in the direction of bias-free policing.

An effort is required to resist the stereotypes our culture imposes on us. Whites—and I am one--have conditioned themselves to perceive Blacks as prone to criminal activity—this is how some of my ancestors excused themselves for enslaving Blacks. Blacks have been conditioned by 400 years of slavery, Jim Crow and segregation to view Whites as racist.

Returning to Michelle Alexander, James Baldwin goes on to tell his nephew, “And if the word integration means anything, this is what it means: that we, with love, shall force our brothers to see themselves as they are, to cease fleeing from reality and begin to change it. ... We cannot be free until they are free.” (Page 262 in the Kindle edition)

If we are to move beyond the heritage of slavery and segregation, we will need to get beyond the stereotypes, to see each other as we really are. To see the humanity we share; to care about each other.

I will post these comments and a spreadsheet based on the complete VSR data set, covering all agencies, presenting rates and disproportions for all categories of data. For more documents covering aspects of the VSR, see my website: [Love the Missouri Vehicle Stops Report](#).

This is a work in progress. Comments? Questions? Corrections?

Don Love

Love.mo.vsr@gmail.com

July 1, 2023; edits July 21, 2023; change title to Review 9/18/24