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Tracking Predators: Microchip Implants, a Constitutional Alternative to GPS Tracking for North Carolina?

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TRACKING PREDATORS: MICROCHIP IMPLANTS, A CONSTITUTIONAL ALTERNATIVE TO GPS TRACKING FOR NORTH CAROLINA?

Alex Rutgers[*]

The North Carolina Court of Appeals' recent decision in State v. Grady held that the State of North Carolina failed to prove the reasonableness of continuing Satellite Based Monitoring (SBM) for the lifetime of a sex offender. It is the State's burden to prove the necessity, and looking at the totality of the circumstances, the court found two factors significant in determining that lifetime SBM is unreasonable: the physical intrusion of the SBM device, and the continuous GPS monitoring. In light of the court's holding that SBM affected a Fourth Amendment search (which was unreasonable even for a convicted sex offender who has a diminished expectation of privacy), how can the State continue to protect the public? One way is to implant microchips into offenders once GPS tracking has ceased. Use of a microchip implant to restrict a convicted sex offender from access to certain public places would alleviate both factors significant to the court's analysis: the implant has little to no discernable effect on a person and a sex offender's movements would not be tracked continually. This avoids the unconstitutional aspects of SBM and achieves a policy goal of protecting the public from recidivism in convicted sex offenders.

I. INTRODUCTION 150
II. MICROCHIP IMPLANT TECHNOLOGY 155
III. STATE LAW ON TRACKING CONVICTED SEX OFFENDERS .157
A. *North Carolina law 157*
B. *Other States' laws 159*
IV. CONSTITUTIONALITY OF LIFETIME SATELLITE BASED MONITORING (SBM)..160

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A. *Initial Constitutional challenge to SBM 160*
B. *GPS tracking is a Fourth Amendment search 162*
C. *An ankle monitor with GPS tracking constitutes a search 164*
D. *SBM must be reasonable as applied to a particular defendant, not a class...165*
E. *Can lifetime SBM remain constitutional?....................169*
V. UTILIZING MICROCHIP IMPLANTS TO PREVENT A SEX OFFENDER'S ACCESS TO VULNERABLE PLACES 171
A. *Implants are less intrusive than GPS ankle monitors...172*
B. *Compelled bodily intrusion is not always an unreasonable search..173*
C. *Establishing an effective microchip implant program..176*
VI. CONCLUSION 179

I. INTRODUCTION

"The General Assembly recognizes that sex offenders often pose a high risk of engaging in sex offenses even after being released from incarceration or commitment and that protection of the public from sex offenders is of paramount governmental interest."[1] After First-Degree Murder, sex offenses carry the longest sentences of any state crime and can carry a mandatory minimum of twenty-five years.[2] The emotional response by the public to crimes against children, who are seen as categorically innocent and vulnerable victims,[3] reinforce the need for harsh prison sentences. The public response is stronger when a perpetrator had been incarcerated previously for a similar or violent crime.[4] Is the answer to keep

[1] N.C. GEN. STAT. § 14-208.5 (2018).

[2] N.C. GEN. STAT. §§ 14-27.21–36 (2018).

[3] *See* State v. Ahearn, 307 N.C. 584, 603 (1983) ("The abused child may be vulnerable due to its tender age, and vulnerability is clearly the concern . . .").

[4] *See* Robin Toner, *Prison Furloughs in Massachusetts Threaten Dukakis Record on Crime*, N.Y. TIMES (July 5, 1988), https://www.nytimes.com/1988/07/05/us/prison-furloughs-in-massachusetts-threaten-dukakis-record-on-crime.html (describing the political effect on Presidential candidate Michael Dukakis of a policy that allowed prison furloughs of prisoners serving life sentences for first-degree murder convictions, and further

perpetrators of these crimes behind bars for the duration of their natural lives? For some, yes. "[T]here is widespread recognition that recidivism has a direct impact on public safety . . . . This is particularly true with regard to crimes that are sexual in nature, given their impact on individual victims and the larger community."[5] For other offenders, perhaps whose crime was one of exposure to a child from a distance,[6] or "secretly peeping"[7] the punishment must still fit the crime and offenders will be released. Even violent offenders are often eventually released from prison.[8]

So what is the State supposed to do? The advent of accurate, inexpensive, and compact GPS technology, which replaced early radio-frequency tracking equipment,[9] allowed for offenders to be

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noting that a prisoner, serving a life sentence, escaped during one of his furloughs, and raped a woman); *see also Weekend Passes*, NAT'L SECURITY PAC (1988), https://www.washingtonpost.com/video/national/this-1988-ad-inspired-the-gops-latest-attack-on-tim-kaine/2016/10/03/c74931f8-8980-11e6-8cdc-4fbb1973b506_video.html, for the campaign video capturing the controversy.

[5] ROGER PRZYBYLSKI, U.S. DEP'T OF JUST., NCJ 247059, *Adult Sex Offender Recidivism*, *in* SEX OFFENDER MANAGEMENT ASSESSMENT AND PLANNING INITIATIVE 107, 107 (2017), https://smart.gov/SOMAPI/pdfs/SOMAPI_Full%20Report.pdf ("The surreptitious nature of sex crimes, the fact that few sexual offenses are reported to authorities and variation in the ways researchers calculate recidivism rates all contribute to the problem.").

[6] N.C. GEN. STAT. § 14-190.9 (2018). Felonious indecent exposure is defined as:

> [A]ny person at least 18 years of age who shall willfully expose the private parts of his or her person in any public place in the presence of any other person less than 16 years of age for the purpose of arousing or gratifying sexual desire shall be guilty of a Class H felony.

Id.

[7] N.C. GEN. STAT. § 14-202(l) (2018) ("If the sentencing court rules that the person is a danger to the community . . . then an order shall be entered requiring the person to register.").

[8] *See* Rob Olson, *Minnesota Supreme Court Upholds Decision to Release Violent Sex Offender*, FOX 9 NEWS (Sept. 20, 2018), http://www.fox9.com/news/minnesota-supreme-court-upholds-decision-to-release-violent-sex-offender. The offender confessed to forcibly raping over 60 teenage girls throughout the 1970's and 80's, and was released from prison and civil commitment in 2018 with GPS monitoring as one of the conditions for his release. *Id.*

[9] *See generally* Robert S. Gable, *The Ankle Bracelet is History: An Informal Review of the Birth and Death of a Monitoring Technology*, 27 J. OF OFFENDER

tracked using ankle monitors.[10] When paired with computers able to establish physical boundaries called exclusion and inclusion zones,[11] GPS technology has enabled real-time location tracking with devices that could be carried by the wearer.[12] Seeing the convenience of this technology, North Carolina, along with many other states,[13] established a Satellite Based Monitoring ("SBM") program specifically to monitor offenders once they were released from prison and reentered society.[14] Use of this technology and studies evaluating the effectiveness of the program have given lawmakers and the public the peace of mind needed to allow parole and

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MONITORING, Mar. 2015, at 4, 4 (describing the use of new technological solutions, particularly GPS monitors, to reduce prison overcrowding).

[10] *See* Michael D. Abernethy, *Someone's Watching Electronic Monitoring on the Rise, Better Technology and Newer State Laws Driving*, THE TIMES-NEWS (June 21, 2014), http://www.thetimesnews.com/article/20140621/News/306219885.

[11] *See* Lisa Bishop, *The Challenges of GPS and Sex Offender Management*, FED. PROBATION, Sept. 2010, at 33, 33 ("GPS monitoring zones not only exclude geographic areas (exclusion or 'hot zones') for sex offenders such as schools, libraries, etc., but also define acceptable areas. Inclusion zones may be used to identify places where offenders/defendants are required to be (such as home, treatment sessions, or employment) and specific times for those locations.").

[12] *Offender Monitoring Solution Improves Efficiencies and Cuts Costs*, SIERRA WIRELESS, https://www.sierrawireless.com/products-and-solutions/sims-connectivity-and-cloud-services/managed-iot-solutions/omnilink-offender-monitoring-solution (last visited Sept. 24, 2018).

[13] STEPHANIE FAHY ET AL., PEW CHARITABLE TRUST, USE OF ELECTRONIC OFFENDER-TRACKING DEVICES EXPANDS SHARPLY 1 (2016), https://www.pewtrusts.org/-/media/assets/2016/10/use_of_electronic_offender_tracking_devices_expands_sharply.pdf ("All 50 states, the District of Columbia, and the federal government use electronic devices to monitor the movements and activities of pretrial defendants or convicted offenders on probation or parole.").

[14] N.C. GEN. STAT. § 14-208.40 (2018). The satellite-based monitoring program shall use a system that provides all of the following:

> (1) Time-correlated and continuous tracking of the geographic location of the subject using a global positioning system based on satellite and other location tracking technology.
>
> (2) Reporting of subject's violations of prescriptive and proscriptive schedule or location requirements. Frequency of reporting may range from once a day (passive) to near real-time (active).

Id.

release,[15] especially given that monitoring is sometimes imposed for the life of the offender.[16]

Now in its twelfth year, the lifetime SBM program in North Carolina has been deemed to violate an offender's Fourth Amendment rights against an unreasonable search.[17] Departing from previous rulings on SBM's constitutionality,[18] the North Carolina Court of Appeals imposed a new standard: the State must prove that its need to protect the public from a particular defendant outweighs the offender's expectation of privacy.[19] This ruling could leave lawmakers scrambling to impose enforceable and constitutional solutions for these unmonitored offenders.

The advent of microchip implant technology paired with certain security pedestals found in retail stores[20] can establish physical boundaries that would set off an alert if an offender crossed into a prohibited area, such as a school or toy store. Although the concept of the State physically injecting even something as small as a grain of rice[21] might, at first blush, seem shocking when compared to an

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[15] *See generally* Philip Bulman, *Sex Offenders Monitored by GPS Found to Commit Fewer Crimes*, NAT'L INST. OF JUST., Feb. 2013, at 22, 22 ("A study of California high-risk sex offenders on parole found that those placed on GPS monitoring had significantly lower recidivism rates than those who received traditional supervision.").

[16] N.C. GEN. STAT. § 14-208.41(a) (2018).

[17] *See* State v. Grady, 817 S.E.2d 18, 28 (N.C. Ct. App. 2018) ("As a recidivist sex offender, defendant's expectation of privacy is appreciably diminished as compared to law-abiding citizens. However, the State failed to present any evidence of its need to monitor defendant, or the procedures actually used to conduct such monitoring in unsupervised cases . . . . Therefore, the State failed to prove, by a preponderance of the evidence, that lifetime SBM of defendant is a reasonable search under the Fourth Amendment.").

[18] *See* State v. Bowditch, 364 N.C. 335 (2010); State v. Davis, 2016 N.C. App. LEXIS 256 (2016); State v. Alldred, 245 N.C. App. 450 (2016); State v. Carver, 2015 N.C. App. LEXIS 929 (2015) (upholding the constitutionality of North Carolina's SBM program as part of a civil, regulatory scheme).

[19] *See Grady*, 817 S.E.2d at 26.

[20] *Retail Security and Loss Prevention Solutions*, CATALYST, https://www.catalyst-direct.com/us/solutions/loss-prevention (last visited Sept. 24, 2018).

[21] *See* Yael Grauer, *A Practical Guide to Microchip Implants*, ARS TECHNICA (Jan. 3, 2018), https://arstechnica.com/features/2018/01/a-practical-guide-to-microchip-implants.

ankle monitor, a microchip implant reduces the level of physical intrusion to the offender's person and is invisible to an observer, which eliminates the stigma of an attached ankle monitor.[22] Further, it cannot track an offender's movements,[23] which is one of the main reasons GPS ankle monitors are considered a search for Fourth Amendment purposes.

However, the use of this technology is not without controversy. The effectiveness of GPS ankle monitors at preventing recidivism has been contested,[24] the implanting of a microchip into a person's body might affect a seizure under the Fourth Amendment, and several states have preemptively passed legislation prohibiting the mandatory implantation of a microchip into employees, though those laws are specifically not "related to the use of RFID for GPS monitoring of offenders."[25]

The analysis of this recent development proceeds in five parts. Part II is a description of microchip implant technology and how it is currently used in society. Part III briefly describes the laws in North Carolina for tracking convicted sex offenders. Part IV provides a case history of constitutional challenges to SBM

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[22] *See* State v. Morrow, 200 N.C. App 123, 136–37 (2009) ("[The SBM statute] imposes significant affirmative obligations and a *severe stigma* on every person to whom it applies.") (emphasis added) (quoting Wallace v. Indiana, 905 N.E.2d 371, 379 (Ind. 2009)).

[23] Jefferson Graham, *You Will Get Chipped – Eventually*, USA TODAY (Aug. 9, 2017), https://www.usatoday.com/story/tech/2017/08/09/you-get-chipped-eventually/547336001 (explaining that despite what people see in the media, microchip implants do not track movement with GPS).

[24] State v. Bowditch, 364 N.C. 335, 353 (2010) (Hudson, J., dissenting) ("We all agree that innovative approaches are especially necessary to minimize, if not remove, any contact between vulnerable children and those who would prey on them. My review of the record here, however, reveals that the satellite-based monitoring (SBM) program as implemented through the Department of Correction has marginal, if any, efficacy in accomplishing that important purpose.").

[25] *Radio Frequency Identification (RFID) Privacy Laws*, NAT'L CONF. OF ST. LEGISLATURES (Jan. 2, 2018), http://www.ncsl.org/research/telecommunications-and-information-technology/radio-frequency-identification-rfid-privacy-laws.aspx. Five states have passed legislation which "Prohibits Mandatory Implantation of a RFID Microchip," including: California, Missouri, North Dakota, Oklahoma, and Wisconsin. *Id.*

monitoring programs. Part V presents an overview of how the technology might be implemented for offenders released from the SBM program and evaluates the constitutionality of such a program.

II. MICROCHIP IMPLANT TECHNOLOGY

A microchip implant is a small, rice-sized, copper antenna wire coil encased in a glass cylinder inserted under the skin.[26] It does not have a battery and operates using Radio-Frequency Identification (RFID) which does not transmit information until coming into contact with a magnetic field generated by a reader.[27] Unlike what is sometimes portrayed in the media, microchip implants do not broadcast a signal, nor are wearers able to be "tracked" using GPS.[28] A common, widespread use of RFID tags is for loss prevention in retail environments: a tag is attached to the product which will trigger an alarm if that product is carried through a "gate" without being deactivated at the register.[29]

The first known microchip implant into a human occurred in 1998 when a British cybernetic scientist had one inserted into himself to study the "control of intelligent buildings run by computers."[30] Since then, use of this technology has spread. Some uses include high profile incidents such as in 2004 when the Attorney General of Mexico had 160 members of his staff implanted with a microchip in order to keep track of who accessed secure areas.[31] Today, some estimate that over 10,000 people worldwide have a microchip implant, which is used for a variety of tasks such as opening secure doors, tracking employees' activities within an

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[26] Grauer, *supra* note 21.

[27] *Id.*

[28] *Id.*

[29] Claire Swedberg, *Checkpoint Systems Offers RFID Security for Retail Stores*, RFID J. (June 10, 2011), https://www.rfidjournal.com/articles/view?8518.

[30] Steve Connor, *Professor Has World's First Silicon Chip Implant*, INDEP. (Aug. 26, 1998), https://www.independent.co.uk/news/professor-has-worlds-first-silicon-chip-implant-1174101.html.

[31] Will Weissert, *Microchips Implanted in Mexican Officials*, NBC NEWS (July 14, 2004), http://www.nbcnews.com/id/5439055/ns/technology_and_science-tech_and_gadgets/t/microchips-implanted-mexican-officials/#.W5vVXuhKjcs.

office, making secure credit card or bitcoin payments, accessing medical records, and supplanting train tickets.[32]

X-Ray showing typical microchip implant location in the human hand.[33]

A single implant is usually inserted in the area between the thumb and forefinger, enabling the user to wave their hand near a scanner as a "substitute for keys or to store emergency documents such as wills."[34] If the user changes their mind, microchip implants are generally not difficult to take out as the procedure only requires a small incision; but they can be designed to be permanent by inserting it under the triceps muscle, requiring surgery to remove.[35]

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[32] Bjorn Cyborg, *Why Swedes Are Inserting Microchips Into Their Bodies*, ECONOMIST (Aug. 2, 2018), https://www.economist.com/europe/2018/08/02/why-swedes-are-inserting-microchips-into-their-bodies.

[33] Grauer, *supra* note 21.

[34] *Id.*

[35] *Id.*

III. STATE LAW ON TRACKING CONVICTED SEX OFFENDERS

Every state treats sex offenders as a distinct group of criminals,[36] and over 165,000 offenders are serving sentences in state prisons.[37] Determining appropriate conditions for release from custody is an issue faced continually by all states since "95 percent of these offenders will ultimately be released to communities, at a rate of approximately 10,000–20,000 per year."[38] This section will first examine North Carolina law for tracking convicted sex offenders, then various other states' laws.

A. *North Carolina law*

North Carolina established a distinct sex offender registration program for offenders post-release because "sex offenders often pose a high risk of engaging in sex offenses even after being released from incarceration or commitment and that protection of the public from sex offenders is of paramount governmental interest."[39] There are two established registration programs, one for sex offenders generally and a second for violent offenders.[40] The first, the Sex Offender and Public Protection Registration Program, requires any "person convicted of an offense against a minor or of a sexually violent offense" to register as an offender for 30 years.[41] Offenders in this first category have the opportunity to "petition in superior court to shorten their registration time period after 10 years of registration."[42] The second, the Sexually Violent Predator Registration Program, is for "any person who is a recidivist, who commits an aggravated offense, or who is determined to be a

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[36] *See* Conn. Dep't of Pub. Safety v. Doe, 538 U.S. 1, 4 (2003) ("The victims of sex assault are most often juveniles, and when convicted sex offenders reenter society, they are much more likely than any other type of offender to be re-arrested for a new rape or sexual assault.").

[37] *See* CHRISTOPHER LOBANOV-ROSTOVSKY, U.S. DEP'T OF JUSTICE, NCJ 247059, *Sex Offender Management Strategies*, *in* SEX OFFENDER MANAGEMENT ASSESSMENT AND PLANNING INITIATIVE, 181, 182 (2017).

[38] *Id.*

[39] N.C. GEN. STAT. § 14-208.5 (2018).

[40] *Id.* §§ 14-208.7, .20.

[41] *Id.* § 14-208.6A.

[42] *Id.*

sexually violent predator."[43] This classification requires lifetime registration, and "[e]xcept as provided under G.S. 14-208.6C, the requirement of registration shall not be terminated."[44]

In addition to registration, the statute also established in 2006 a monitoring program using Satellite Based Monitoring ("SBM") for offenders from both programs who targeted children, employed violence, or are recidivist.[45] The duration of SBM for this category of offenders is for the person's life, unless they successfully petition for termination.[46] Offenders can request that SBM be terminated after they have served their sentence and "completed any period of probation, parole, or post-release supervision imposed as part of the sentence."[47] However, offenders who "committed an offense involving the physical, mental, or sexual abuse of a minor" and require "the highest possible level of supervision and monitoring"[48] are not eligible to have SBM terminated.[49]

As of June 30, 2017, there were 789 offenders enrolled in SBM in North Carolina whose movements were tracked in near real-time,[50] and any violations of an offender's "prescriptive and proscriptive schedule or location requirements" were logged and reported.[51] Of those enrolled, 444 offenders were in an unsupervised SBM status, meaning they were no longer under the authority of North Carolina's Community Corrections because they "ha[d] completed their periods of supervision or incarceration but [were]

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[43] *Id.*

[44] *Id.* § 14-208.23; *see id.* § 14-208.6C ("Discontinuation of registration requirement. The period of registration required by any of the provisions of this Article shall be discontinued only if the conviction requiring registration is reversed, vacated, or set aside, or if the registrant has been granted an unconditional pardon of innocence for the offense requiring registration.").

[45] *Id.* § 14-208.40(a).

[46] *Id.* § 14-208.41(a).

[47] *Id.* § 14-208.43(a).

[48] *Id.* § 14-208.40(a)(2).

[49] *Id.* § 14-208.43(e).

[50] N.C. DEP'T OF PUB. SAFETY, REPORT ON ELECTRONIC MONITORING/GLOBAL POSITIONING SYSTEMS FOR SEX OFFENDERS 3 (2018), https://www.ncleg.net/documentsites/committees/JLOCJPS/Reports/FY%202017-18/DPS_Report_on_Electronic_Monitoring_Global_Positioning_Systems_for_Sex_Offenders_2018_03_01.pdf.

[51] N.C. GEN. STAT. § 14-208.40(c)(2) (2018).

subject to lifetime tracking pursuant to statute."[52] The *Grady* ruling calls into question the constitutionality of SBM for these unsupervised offenders, for "SBM intrudes to varying degrees upon defendant's privacy through (1) the compelled attachment of the ankle monitor, and (2) the continuous GPS tracking it [a]ffects."[53] This means that, for the first time since the monitoring statute was enacted, unsupervised offenders might not be monitored using GPS ankle bracelets.

B. *Other States' laws*

Every state has registration requirements for sex offenders, with varying minimum lengths. For example:

> 18 states provide a single indefinite or lifetime registration period for all sex offenses, but a substantial portion of these allow those convicted of less serious offenses to return to court after a specified period of time to seek removal;
>
> 19 states and the District of Columbia have a two-tier registration system, which requires serious offenders and recidivists to register for life but automatically excuses those convicted of misdemeanors and other less serious offenses from the obligation to register after a specified period of time, typically 10 years;
>
> 13 states and the federal system have a three-tier system, requiring Tier III offenders to register for life, and Tier I and Tier II offenders to register for a term of years, generally 15 and 25 years.[54]

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[52] N.C. DEP'T OF PUB. SAFETY, *supra* note 50, at 2–3.

[53] *See* State v. Grady, 817 S.E.2d 18, 24 (N.C. Ct. App. 2018). The court reasoned that:

> Defendant is an unsupervised offender. He is not on probation or supervised release, but rather was enrolled in lifetime SBM more than three years after 'all rights of citizenship which were forfeited on conviction including the right to vote, [we]re by law automatically restored to him.' Solely by virtue of his legal status, then, it would seem that defendant has a greater expectation of privacy than a supervised offender. Yet, as a recidivist sex offender, defendant must maintain lifetime registration on DPS's statewide sex offender registry.

Id. at 24 (alteration in original) (citation omitted).

[54] Margaret Love, *50-State Survey of Relief from Sex Offender Registration*, COLLATERAL CONSEQUENCE RES. CTR. (May 14, 2015), https://ccresourcecenter.org/2015/05/14/50-state-survey-of-relief-provisions-affecting-sex-offender-registration.

All states have some sort of electronic monitoring legislation for criminals.[55] Over forty states currently implement GPS monitoring of convicted sex offenders, up from twenty in 2006.[56] This is due to several factors, including technological improvements to the devices themselves, but primarily due to the effectiveness of the program.[57]

IV. CONSTITUTIONALITY OF LIFETIME SATELLITE BASED MONITORING (SBM)

Under North Carolina's sex offender monitoring statute, an offender "who is a recidivist, who is convicted of an aggravated offense, or who is classified as a sexually violent predator shall maintain registration for the person's life"[58] and "shall enroll in a satellite-based monitoring program . . . for the registration period imposed."[59] This means the statute mandates lifetime imposition of SBM in certain circumstances, requiring courts to confront whether this is constitutional.

A. *Initial Constitutional challenge to SBM*

The initial challenge to the constitutionality of North Carolina's SBM program came before the North Carolina Supreme Court in *State v. Bowditch*.[60] The court dealt with whether defendants charged before the statute was enacted and then subsequently enrolled into lifetime GPS monitoring were therefore subject to *ex post facto* laws[61] in violation of both the North Carolina[62] and United States

[55] *See* Deeanna M. Button et al., *Using Electronic Monitoring to Supervise Sex Offenders: Legislative Patterns and Implications for Community Corrections Officers*, 20 CRIM. JUST. POL'Y REV. 414, 423–24 (2009); Avlana K. Eisenberg, *Mass Monitoring*, 90 S. CAL. L. REV. 123, 125 (2017).

[56] *See* Ben A. McJunkin & J.J. Prescott, *Fourth Amendment Constraints on the Technological Monitoring of Convicted Sex Offenders*, 21 NEW CRIM. L. REV. 379, 383 (2018).

[57] Bulman, *supra* note 15.

[58] N.C. GEN. STAT. § 14-208.23 (2018).

[59] *Id.* § 14-208.41(a).

[60] State v. Bowditch, 364 N.C. 335 (2010).

[61] *Id.* at 336.

[62] N.C. CONST. art. I, § 16 ("Retrospective laws, punishing acts committed before the existence of such laws and by them only declared criminal, are

Constitution.[63] The North Carolina Supreme Court held that the SBM program is not an unconstitutional *ex post facto* criminal punishment, but is instead a non-punitive element of a civil, regulatory scheme designed "to protect our State's children from the recidivist tendencies of convicted sex offenders."[64] The court also dismissed a Fourth Amendment challenge to the imposition of lifetime SBM on defendants after the completion of their supervised probation because "it is beyond dispute that convicted felons do not enjoy the same measure of constitutional protections, including the expectation of privacy under the Fourth Amendment, as do citizens who have not been convicted of a felony."[65]

The Court also addressed the issue of the length of time a class of offenders could be tracked by SBM, stating that:

> SBM's reasonableness is supported by its limited application and its potentially limited duration. Only three classifications of offenders qualify for SBM according to N.C.G.S. § 14-208.40(a). The legislature viewed these categories of offenders as posing a particular risk to society. *It is not excessive to legislate with respect to these types of sex offenders "as a class, rather than require individual determination of their dangerousness."* Individual determinations can be made though . . . if an offender on lifetime SBM petitions the North Carolina Post-Release Supervision and Parole Commission for removal from the SBM program, subject to meeting certain conditions. The possibility of removal from the SBM program following a determination that the "person is not likely to pose a threat to the safety of others" adds to the reasonableness of the SBM program.[66]

Noting that under a majority of circumstances, offenders can petition to be removed from the SBM program, the Court found the lifetime imposition on a class of offenders reasonable.[67] Central to this reasoning was long standing precedent upholding a civil consequence following a felony conviction. In *Hawker v. New York*,[68] the Supreme Court upheld the barring of the defendant from

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oppressive, unjust, and incompatible with liberty, and therefore no ex post facto law shall be enacted.").

[63] U.S. CONST. art. I, § 10, cl. 1.

[64] *Bowditch*, 364 N.C. at 342.

[65] *Id.* at 349–50.

[66] *Id.* at 352 (emphasis added) (citations omitted).

[67] *Id.*

[68] Hawker v. New York, 170 U.S. 189 (1898).

practicing medicine because of his felony conviction, despite the fact that the statute was passed after the crime was committed.[69] In affirming that "the legislature has power in cases of this kind to make a rule of universal application," the Court confirmed that individual determinations particular to a defendant were not required.[70] Years later, this reasoning was used in *Smith v. Doe*[71] to uphold the constitutionality of "[Alaska's] determination to legislate with respect to convicted sex offenders *as a class*, rather than require individual determination of their dangerousness, does not make the statute a punishment under the *Ex Post Facto* Clause."[72] The constitutionality of a class-based determination that certain types of sex offenders under North Carolina's statute are ineligible to petition for the termination of SBM would become the central issue decided in *Grady.*

B. *GPS tracking is a Fourth Amendment search*

In 2012, the Supreme Court of the United States decided in *United States v. Jones*[73] that "the Government's installation of a GPS device on a target's vehicle, and its use of that device to monitor the vehicle's movements, constitutes a 'search'"[74] within the meaning of the Fourth Amendment.[75] Since "the Fourth Amendment protects people—and not simply 'areas'—against unreasonable searches and seizures,"[76] the fact that the defendant's car was being driven on public roads did not negate the fact that "for most of our history the Fourth Amendment was understood to embody a particular concern for government trespass upon the areas ('persons, houses, papers,

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[69] *Id.* at 200.
[70] *Id.* at 197.
[71] Smith v. Doe, 538 U.S. 84 (2003).
[72] *Id.* at 104 (emphasis added) (holding that in part since the statute was not punitive, it was a Constitutional civil penalty).
[73] United States v. Jones, 565 U.S. 400 (2012).
[74] *Id.* at 404.
[75] U.S. CONST. amend. IV ("The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.").
[76] Katz v. United States, 389 U.S. 347, 353 (1967).

and effects') it enumerates."[77] After holding that the attachment of a GPS tracker to the defendant's vehicle was a Fourth Amendment search, the Court then addressed the next question of whether that search was reasonable.[78] "The Government argue[d] . . . even if the attachment and use of the device was a search, it was reasonable—and thus lawful—under the Fourth Amendment because officers had reasonable suspicion, and indeed probable cause . . . ."[79] The Court dismissed the argument only because the issue was not raised on appeal, and did not address the merits.[80]

North Carolina Court of Appeals addressed this precedent, that the attachment of a GPS tracker to a suspect's vehicle constituted a search, in a North Carolina case: *State v. Jones*.[81] Defendant, a recidivist sex offender, was ordered to enroll in the SBM program for the remainder of his life.[82] Challenging the trial court's ruling, the defendant asserted that lifetime SBM was an unconstitutional search and "essentially argue[d] that if affixing a GPS to an individual's vehicle constitutes a search of the individual, then the arguably more intrusive act of affixing an ankle bracelet to an individual must constitute a search of the individual as well."[83] The Court rejected this argument, because:

> [t]he context presented in the instant case—which involves a civil SBM proceeding—is readily distinguishable from that presented in *[United States v.] Jones,* where the Court considered the propriety of a search in the context of a motion to suppress evidence. We conclude, therefore, that the specific holding in *[United States v.] Jones* does not control in the case *sub judice*.[84]

This distinction meant that a defendant in a criminal case was able to assert Fourth Amendment protection for the search affected by a GPS tracker, but a sex offender challenging the effect of being ordered to wear a GPS tracker was not able to assert the same

[77] *Jones*, 565 U.S. at 406.
[78] *Id.*
[79] *Id.* at 413 (internal quotation marks omitted).
[80] *Id.*
[81] State v. Jones, 231 N.C. App. 123 (2013). Unrelated to the defendant in *Jones*, 565 U.S. 400.
[82] *Id.* at 125.
[83] *Id.* at 127.
[84] *Id.*

protection. This distinction would be erased several years later by the Supreme Court.[85]

C. *An ankle monitor with GPS tracking constitutes a search*

State v. Jones remained the law in North Carolina, and when an identical constitutional challenge was brought in *State v. Grady,*[86] the North Carolina Court of Appeals initially affirmed that lifetime SBM was constitutional, relying on its ruling in *State v. Jones*.[87] After the North Carolina Supreme Court denied certiorari, the Supreme Court of the United States took the case to determine whether the attaching of a GPS monitor as part of a civil, regulatory scheme constitutes a Fourth Amendment search.[88] The Court first defined the bounds of its earlier precedent: attaching a GPS device to a car was a search[89] and the gathering of information by a drug sniffing dog on a defendant's front porch was a search.[90] In both cases, the government gained evidence by physically intruding on constitutionally protected areas.[91] "That the officers learned what they learned only by physically intruding on [defendant's] property to gather evidence is enough to establish that a search occurred."[92]

Looking at the attachment of a GPS ankle monitor to a sex offender, in a unanimous opinion, the Supreme Court ruled that "in light of these decisions, it follows that a State also conducts a search when it attaches a device to a person's body, without consent, for the purpose of tracking that individual's movements."[93] Addressing the 'decisive weight' the North Carolina Court of Appeals placed on the civil nature of the SBM program when denying to describe the tracking it affects as a Fourth Amendment search, the Court responded: "[i]t is well settled, however, that the Fourth Amendment's protection extends beyond the sphere of criminal

[85] Grady v. North Carolina, 135 S. Ct. 1368, 1371 (2015).
[86] State v. Grady, 2014 N.C. App. LEXIS 467 (N.C. Ct. App. 2014).
[87] *Id.* at *5.
[88] *Grady*, 135 S. Ct. at 1370.
[89] United States v. Jones, 565 U.S. 400, 404 (2012).
[90] Florida v. Jardines, 569 U.S. 1, 11–12 (2013).
[91] *Id.* at 11.
[92] *Id.*
[93] *Grady*, 135 S. Ct. at 1370.

investigations, and the government's purpose in collecting information does not control whether the method of collection constitutes a search."[94] This holding eliminated the distinction between a Fourth Amendment search in a criminal proceeding compared to a civil context.

However, the Supreme Court's decision did not decide whether lifetime SBM was unconstitutional, because the "Fourth Amendment prohibits only *unreasonable* searches. The reasonableness of a search depends on the totality of the circumstances, including the nature and purpose of the search and the extent to which the search intrudes upon reasonable privacy expectations."[95] This two-prong totality of the circumstances analysis became known as a *Grady* hearing,[96] where it is the State's burden to demonstrate the reasonableness of a search.[97] "The reasonableness of a search depends on the totality of the circumstances, including [1] the nature and purpose of the search and [2] the extent to which the search intrudes upon reasonable privacy expectations."[98] The Supreme Court did not rule on whether SBM as a search was reasonable generally, nor whether it is reasonable in this case.[99] Instead, the Supreme Court sent the case back to the trial court for a *Grady* hearing on SBM's reasonableness.

D. *SBM must be reasonable as applied to a particular defendant, not a class*

The trial court initially found that Grady's lifetime enrollment in the SBM program was a reasonable search, but that decision was reversed by the Court of Appeals.[100] Applying the two-part analysis,

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[94] *Id.* at 1371 (citation omitted) (internal quotation marks omitted).

[95] *Id.*

[96] *See*, *e.g.*, State v. Bursell, 813 S.E.2d 463, 464 (N.C. Ct. App. 2018) ("[T]he trial court erred by imposing lifetime SBM without conducting the required *Grady* hearing . . . .").

[97] State v. Blue, 246 N.C. App. 259, 265 (2016) ("[W]e conclude that the State shall bear the burden of proving that the SBM program is reasonable . . . .").

[98] *Grady*, 135 S. Ct. at 1371.

[99] *See id.* ("The North Carolina courts did not examine whether the State's monitoring program is reasonable—when properly viewed as a search—and we will not do so in the first instance.").

[100] State v. Grady, 817 S.E.2d 18, 20 (N.C. Ct. App. 2018).

the court found that at hearing, the State only presented adequate evidence to "address the nature and purpose of SBM, but not the extent to which the search intrudes upon reasonable privacy expectations."[101] The court found that the SBM program interfered with Grady's reasonable expectation of privacy in two ways: "(1) the compelled attachment of the ankle monitor, and (2) the continuous GPS tracking it [a]ffects."[102]

The compelled attachment of ankle monitors, at least in comparison to the device described in *Bowditch* eight years prior,[103] was found not to be unreasonably obtrusive.[104] Unlike the older models, the SBM device can be worn in up to 15 feet of water, and its physical presence does not limit a wearer's activities or movement.[105] The device can be worn on an airplane, is small enough to be hidden by a sock, and only requires two hours of

[101] *Id.* at 25 (internal quotation marks omitted).

[102] *Id.*

[103] State v. Bowditch, 364 N.C. 335, 338 (2010) ("All SBM participants receive three items of equipment. First, at all times they wear a transmitter, which is a bracelet held in place by a strap worn around one ankle. Tampering with the bracelet or removing it triggers an alert. The ankle bracelet in use at the time of the hearings was approximately three inches by one and three-quarters inches by one inch. Second, participants wear a miniature tracking device (MTD) around the shoulder or at the waistline on a belt. The MTD may not be hidden under clothing. The device contains the Global Positioning System (GPS) receiver and is tethered to the ankle bracelet by a radio-frequency (RF) signal. The size of the MTD in use at the time of the hearings was four and one-quarter inches by two inches by three inches. The MTD includes an electronic screen that displays text messages communicating possible violations or information to the participant. Third, a base unit is required for charging the MTD's battery, and although it is typically kept at a participant's residence, the base unit may be used to recharge the MTD wherever electricity is available. The MTD requires at least six hours of charging per twenty-four hour period.").

[104] *Grady*, 817 S.E.2d at 25 ("The SBM program currently uses an electronic monitoring device called the ExacuTrack One ('ET-1'), which is 'installed' on an offender's ankle with tamper-proof fiber-optic straps. The ET-1 is physically unobtrusive: it weighs a mere 8.7 ounces and is small enough to be covered by a pant leg or sock. Unlike prior SBM devices, the ET-1 is waterproof up to 15 feet and may be worn in the ocean. The ET-1 does not physically limit an offender's movements; employment opportunities; or ability to travel, even on airplanes.").

[105] *Id.* at 25.

charging per day,[106] compared to the six hours of charging in earlier models.[107] In summary, the Court determined the SBM device to "be more inconvenient than intrusive, in light of defendant's diminished expectation of privacy as a convicted sex offender."[108]

Examining the continuous GPS tracking the SBM effects on the wearer, the Court found "this aspect of SBM is 'uniquely intrusive' as compared to other searches upheld by the United States Supreme Court."[109] While a recidivist sex offender must register with the State in accordance with statute, "this type of static information [required for registration] is materially different from the continuous, dynamic location data SBM yields."[110] This means that because "GPS

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[106] *Id.*

[107] *Bowditch*, 364 N.C. at 338. Lithium battery technology, along with other advancements, reduced the charging requirements of ankle monitors by 2/3 between 2010 and 2018.

[108] *Grady*, 817 S.E.2d at 25.

[109] *Id.* at 25–26.

[110] *Grady,* 817 S.E.2d at 26. The Department of Public Safety shall . . . require all of the following:

> (1) The person's full name, each alias, date of birth, sex, race, height, weight, eye color, hair color, drivers license number, and home address.
>
> (1a) A statement indicating what the person's name was at the time of the conviction for the offense that requires registration; what alias, if any, the person was using at the time of the conviction of that offense; and the name of the person as it appears on the judgment imposing the sentence on the person for the conviction of the offense.
>
> (2) The type of offense for which the person was convicted, the date of conviction, and the sentence imposed.
>
> (3) A current photograph taken by the sheriff, without charge, at the time of registration.
>
> (4) The person's fingerprints taken by the sheriff, without charge, at the time of registration.
>
> (5) A statement indicating whether the person is a student or expects to enroll as a student within a year of registering. If the person is a student or expects to enroll as a student within a year of registration, then the registration form shall also require the name and address of the educational institution at which the person is a student or expects to enroll as a student.
>
> (6) A statement indicating whether the person is employed or expects to be employed at an institution of higher education within a year of registering. If the person is employed or expects to be employed at an institution of higher education within a year of registration, then the

monitoring generates a precise, comprehensive record of a person's public movements that reflects a wealth of detail about her familial, political, professional, religious, and sexual associations[,]"[111] there are additional privacy implications at issue which the Court did not choose to overlook because the defendant was a sex offender. Finally, to access this GPS data, the Court also found "it is significant that law enforcement is not required to obtain a warrant . . . . The ability to track a suspect's whereabouts is an undeniably powerful tool in a criminal investigation."[112] These factors led the North Carolina Court of Appeals to conclude that Grady's lifetime enrollment in the SBM program did not constitute a reasonable search under the Fourth Amendment.[113]

Specifically, the North Carolina Court of Appeals stated, "there must be sufficient record evidence to support the trial court's conclusion that SBM is reasonable as applied to *this particular defendant*."[114] This overturns the reasoning employed in *Bowditch* that class-based determinations are reasonable,[115] and creates a situation where the privacy interest of a particular defendant depends on their specific past actions. Therefore, while the State failed to present sufficient evidence to justify lifetime SBM for defendant Grady specifically, this does not preclude the State in other cases from introducing evidence that could justify SBM for a term of years or even a lifetime for another defendant. "We reiterate

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registration form shall also require the name and address of the educational institution at which the person is or expects to be employed.

(7) Any online identifier that the person uses or intends to use.

N.C. GEN. STAT § 14-208.7(b) (2018).

[111] United States v. Jones, 565 U.S. 400, 415 (2012) (Sotomayor, J., concurring).

[112] *Grady*, 817 S.E.2d at 26.

[113] *Id.* at 28.

[114] *Id.* at 26 (emphasis in original).

[115] *Compare id.* ("[T]here must be sufficient record evidence to support the trial court's conclusion that SBM is reasonable as applied to *this particular defendant*.") (emphasis in original), *with* State v. Bowditch, 364 N.C. 335, 352 (2010) ("The legislature viewed these categories of offenders as posing a particular risk to society. It is not excessive to legislate with respect to these types of sex offenders '*as a class, rather than require individual determination of their dangerousness*.'") (emphasis added) (quoting Smith v. Doe, 538 U.S. 84, 104 (2003)).

the continued need for *individualized determinations of reasonableness* at *Grady* hearings."[116] The holding is not a ban on the imposition of lifetime SBM for unsupervised offenders, but instead is limited to the specific facts of *Grady*.

E. *Can lifetime SBM remain constitutional?*

In light of this ruling, there are at least four options available to the State to continue to protect the public from offenders when it is unreasonable to proscribe lifetime SBM. First, the State could require a warrant to access an offender's historic location data while continuing to allow monitoring staff access to real time data. This would reduce the intrusiveness of the search for all offenders in the SBM program. "[C]ontinuous monitoring . . . generates a history of the wearer's movements [and therefore] intrudes upon a legitimate expectation of privacy."[117] A 'firewall' could be created between the staff which monitor the sex offender SBM program and other law enforcement departments, requiring that a warrant be issued in order to access any offender location data. This would address the North Carolina Court of Appeals' concern that access to a sex offender's location data or ability to track a suspect is an "undeniably powerful tool in a criminal investigation"[118] by giving that private information the protection of a warrant.[119]

Second, the capabilities of the GPS ankle monitors used could be altered to not actively track movement, but instead to provide only real-time warnings if an offender moved into a prohibited area. This would mean that those locations, such as schools or day care centers, which offenders are prohibited from visiting, would still

[116] *Grady*, 817 S.E.2d at 28 (emphasis added).

[117] *Id.* at 29 (Bryant, J., dissenting).

[118] *Id.* at 26.

[119] *See* Carpenter v. United States, 138 S. Ct. 2206, 2216–18 (2018) ("The question we confront today is how to apply the Fourth Amendment to a new phenomenon: the ability to chronicle a person's past movements through the record of his cell phone signals . . . . And like GPS monitoring, cell phone tracking is remarkably easy, cheap, and efficient compared to traditional investigative tools."). In *Carpenter,* the Court held that by acquiring the defendant's historic cell phone location data, it was a violation of his reasonable expectation of privacy and a search under the Fourth Amendment. *Id.* at 2219. The Court ruled a warrant was necessary to obtain this historic location data. *Id.* at 2221.

have the State's active protection. It would also significantly reduce the level of privacy intrusion the continuous GPS location monitoring affects, and would likely not continue to constitute a 'search' within the meaning of the Fourth Amendment.

Third, the statute could be changed to require SBM reasonableness hearings after a term of years instead of allowing the imposition of lifetime monitoring without the possibility of removal from the program. This would not be a drastic change because at present the statute allows nearly all offenders, even those who have had SBM imposed for life because they are a sexually violent predator or are recidivist, to petition for removal from SBM.[120] The exception is for those who have committed an offense against a child and are deemed to require the highest level of supervision and monitoring upon release from custody.[121] This would not preclude the possibility of offenders remaining monitored, potentially for the remainder of their life. However, it would provide every offender at

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[120] N.C. GEN. STAT. § 14-208.43 (2018) ("Request for termination of satellite-based monitoring requirement."). The statute outlines that:

> (a) An offender described by G.S. 14-208.40(a)(1) or G.S. 14-208.40(a)(3) who is required to submit to satellite-based monitoring for the offender's life may file a request for termination of monitoring requirement with the Post-Release Supervision and Parole Commission. The request to terminate the satellite-based monitoring requirement and to terminate the accompanying requirement of unsupervised probation may not be submitted until at least one year after the offender: (i) has served his or her sentence for the offense for which the satellite-based monitoring requirement was imposed,, and (ii) has also completed any period of probation, parole, or post-release supervision imposed as part of the sentence . . . .
>
> (e) The Commission shall not consider any request to terminate a monitoring requirement except as provided by this section. The Commission has no authority to consider or terminate a monitoring requirement for an offender described in G.S. 14-08.40(a)(2).

Id. (emphasis omitted).

[121] N.C. GEN. STAT. § 14-208.40(a)(2) (2018). ("Any offender who satisfies all of the following criteria: (i) is convicted of a reportable conviction as defined by G.S. 14-208.6(4), (ii) is required to register under Part 2 of Article 27A of Chapter 14 of the General Statutes, (iii) has committed an offense involving the physical, mental, or sexual abuse of a minor, and (iv) based on the Division of Adult Correction and Juvenile Justice's risk assessment program requires the highest possible level of supervision and monitoring.").

least an opportunity to petition the Court for a removal from the SBM program, under the same type of *Grady* hearing which analyzed the reasonableness of the continued intrusion of privacy against that particular defendant.

Fourth, North Carolina could implant a microchip into offenders under the Sexually Violent Predator Registration Program to prevent their access to categorically sensitive locations, such as schools, even after SBM has been discontinued. The analysis below will examine the constitutionality and implementation of implanting microchips into these offenders.

V. UTILIZING MICROCHIP IMPLANTS TO PREVENT A SEX OFFENDER'S ACCESS TO VULNERABLE PLACES

In the same way that RFID chips can prevent the unauthorized removal of merchandise from a store by setting off an alarm if someone walks through the pedestals at the exit without paying,[122] so too could a microchip implant be a constitutional way to prevent a sex offender from entering a vulnerable location such as a school, where monitored offenders are already prohibited from entering without authorization.[123]

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[122] *Retail Security and Loss Prevention Solutions*, *supra* note 20.

[123] N.C. GEN. STAT. § 14-208.18 (2018). The statute outlines:

> Sex offender unlawfully on premises:
>
> (a) It shall be unlawful for any person required to register under this Article, if the offense requiring registration is described in subsection (c) of this section, to knowingly be at any of the following locations:
>
> (1) On the premises of any place intended primarily for the use, care, or supervision of minors, including, but not limited to, schools, children's museums, child care centers, nurseries, and playgrounds.
>
> (2) Within 300 feet of any location intended primarily for the use, care, or supervision of minors when the place is located on premises that are not intended primarily for the use, care, or supervision of minors, including, but not limited to, places described in subdivision (1) of this subsection that are located in malls, shopping centers, or other property open to the general public.
>
> (3) At any place where minors frequently congregate, including, but not limited to, libraries, arcades, amusement parks, recreation parks, and swimming pools, when minors are present.
>
> (4) On the State Fairgrounds during the period of time each year that the State Fair is conducted, on the Western North Carolina Agricultural

A. *Implants are less intrusive than GPS ankle monitors*

With current GPS monitoring technology, SBM will trigger an alarm if an offender leaves an inclusion zone ("areas in which they must remain for a period of time") or attempts to enter an exclusion zone (areas "which they must refrain from visiting").[124] If a court determines, as it did in *Grady*, that lifetime SBM is unconstitutional, then the offender could still be excluded from locations such as schools, toy stores, and day care centers by implanting a microchip that would trigger an alarm at those locations set off by pedestals similar to ones found at retail locations.[125]

Although an implant is more physically intrusive than a GPS ankle monitor, it is less inconvenient to the offender. Applying the two-part analysis from *Grady* demonstrates that a microchip implant would not raise the same constitutional issues that a GPS ankle monitor does, and would not affect an unreasonable search. First is the level of physical intrusion and inconvenience caused. An implant is completely invisible to the public once the small scar heals following the injection, meaning any stigma the wearer of an ankle monitor experiences would be eliminated, and the implant cannot be felt by the wearer.[126] It requires no maintenance, no charging, and there are no limitations on what the offender can choose to wear to conceal it.[127] Additionally, although no one would voluntarily wear a GPS ankle monitor, over ten thousand people have chosen to implant a microchip for various reasons.[128] The North Carolina Court of Appeals determined that modern ankle monitors

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> Center grounds during the period of time each year that the North Carolina Mountain State Fair is conducted, and on any other fairgrounds during the period of time that an agricultural fair is being conducted.

Id. (emphasis omitted).

[124] State v. Bowditch, 364 N.C. 335, 339 (2010) (identifying that violations of these zone controls are reported to local law enforcement for further investigation).

[125] *Retail Security and Loss Prevention Solutions*, *supra* note 20.

[126] Grauer, *supra* note 21.

[127] *See generally* State v. Grady, 817 S.E.2d 18, 24 (N.C. Ct. App. 2018). Unlike the current device used for SBM, which is small enough to "be worn underneath socks and/or long pants," a microchip implant would allow an offender to wear, for example, shorts and sandals without the public being aware of the device. *Id.*

[128] Cyborg, *supra* note 32.

are "more inconvenient than intrusive, in light of defendant's diminished expectation of privacy as a convicted sex offender[;]"[129] the microchip implant, while certainly more physically intrusive, is significantly less inconvenient than an ankle monitor.

Second is whether the implant would affect "a continuous, warrantless search . . . [n]otwithstanding defendant's diminished expectation of privacy."[130] An implant, like the static registration information statutorily required, is "materially different from the continuous, dynamic location data SBM yields."[131] It sends out no signals and records no data;[132] it does not affect a search. The purpose of an implant in this context is to alert local security personnel if an offender attempts to enter a prohibited area, and this is a relatively nonintrusive way for the State to fulfill its "compelling interest in protecting the public, particularly minors, from dangerous sex offenders."[133]

B. *Compelled bodily intrusion is not always an unreasonable search*

The Supreme Court has been wary of allowing searches involving "compelled intrusion into the body" absent a warrant,[134] and a microchip implant clearly would be an intrusion into the body. "In light of our society's concern for the security of one's person, it is obvious that this physical intrusion, penetrating beneath the skin [for the purpose of getting a blood sample], infringes an expectation of privacy that society is prepared to recognize as reasonable."[135] Even certain breathalyzer tests can pass this threshold: "[s]ubjecting a person to a breathalyzer test, which generally requires the production of alveolar or 'deep lung' breath for chemical analysis,

[129] *Grady*, 817 S.E.2d at 25.
[130] *Id.*
[131] *Id.* at 26.
[132] Grauer, *supra* note 21.
[133] *Grady*, 817 S.E.2d at 27.
[134] Skinner v. Ry. Labor Execs. Ass'n, 489 U.S. 602, 616 (1989) (holding that the bodily intrusion of a blood sample is a warrantless search by the railroad company of its employees, but because this was done in a reasonable way, for the purpose of ensuring railway safety, this did not violate the 4th Amendment).
[135] *Id.* (internal citation omitted).

implicates similar concerns about bodily integrity and . . . should also be deemed a search."[136] Additionally, since a seizure is the taking of property and a search is an invasion of privacy, "[i]mplantation of a subdermal RFID chip might constitute a 'seizure,' and collection of compliance data from a subdermal RFID implant a 'search,' within the contours of the Fourth Amendment."[137]

However, finding that the compelled bodily intrusion is a search and seizure "is only to begin the inquiry into the standards governing such intrusions . . . [f]or the Fourth Amendment does not proscribe all searches and seizures, but only those that are unreasonable."[138] Would a microchip implant be reasonable for sex offenders? Most likely, yes. *Maryland v. King*[139] upheld the compelled collection of DNA by means of a cheek swab as a reasonable search.[140] This was in spite of recognizing "[v]irtually any intrusion into the human body will work an invasion of cherished personal security that is subject to constitutional scrutiny," for there was a valid public interest in regularly collecting DNA from convicted felons.[141] Finally, and most directly, "a condition of release can so diminish or eliminate a released prisoner's reasonable expectation of privacy that a suspicionless search by a law enforcement officer would not offend the Fourth Amendment."[142] Therefore, despite the obvious bodily intrusion by a microchip implant and the resultant search and seizure it affects, its compelled insertion into a sex offender released

[136] *Id.* at 616–17 (internal citation omitted).

[137] Isaac B. Rosenberg, *Involuntary Endogenous RFID Compliance Monitoring as a Condition of Federal Supervised Release - Chips Ahoy?*, 10 YALE J.L & TECH. 331, 352 (2008).

[138] *Skinner,* 489 U.S. at 618–19.

[139] Maryland v. King, 569 U.S. 435 (2013).

[140] *Id.* at 441.

[141] *Id.* at 446 (internal citation omitted) (internal quotation marks and punctuation omitted).

[142] Samson v. California, 547 U.S. 843, 847 (2006). In *Samson*, a defendant, while on parole, was subjected to a warrantless and suspicionless search by law enforcement which revealed contraband. *Id*. Defendant challenged the constitutionality of the search, and the court ruled he did not have a reasonable expectation of privacy against a suspicionless search because he was on probation. *Id.* at 857.

from custody would likely be found reasonable and therefore constitutional.

Several states have passed laws specifically banning the involuntary insertion of a microchip implant.[143] Wisconsin was the first state to do so in 2006,[144] and its law was passed primarily to prevent private employers from forcibly implanting their employees with chips to track their movements and, by extension, their productivity (although, the ban also extended to state government agencies).[145] In Oklahoma, a similar statute was passed in 2008,[146] and there was legislative discussion on making an exception for involuntary implants of microchips for violent felons, though that exception did not become law.[147] The most recent statute was passed by Missouri in 2014, though that statute was specifically designed to ban schools from using RFID technology to track and identify

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[143] *Radio Frequency Identification (RFID) Privacy Laws, supra* note 25. States that have banned involuntary microchip implants are: California, Missouri, North Dakota, Oklahoma, and Wisconsin. *Id*.

[144] WIS. STAT. § 146.25 (2018). ("Required implanting of microchip prohibited. (1) No person may require an individual to undergo the implanting of a microchip. (2) Any person who violates sub. (1) may be required to forfeit not more than $10,000. Each day of continued violation constitutes a separate offense.").

[145] *See* Beth Bacheldor, *Wisconsin Bill to Ban Coerced Chip Implants*, RFID J. (May 2, 2006), https://www.rfidjournal.com/articles/view?2304. *But see* Taylor Carrere, *A Brave New World: Use of Biometric Identifiers and RFID Chips in the Workplace Causes a Stir*, N.C. J.L. & TECH. BLOG (Oct. 9, 2017), http://ncjolt.org/brave-new-world-use-biometric-identifiers-rfid-chips-workplace-causes-stir/ ("[A] Wisconsin company threw their employees a 'Chip Party' where many of its employees were embedded with radio frequency identification (RFID) chips that allows them to do a variety things including opening doors and logging into their computers with nothing more than the chip.").

[146] OKLA. STAT. tit. 63 § 1-1430 (2018).

[147] *House Rejects Forced Microchip Implants for Violent Criminals*, NEWS ON 6 (May 23, 2007), http://www.newson6.com/story/7661199/house-rejects-forced-microchip-implants-for-violent-criminals. The measure was initially approved by the State Senate, would have "authorize[d] microchip implants for persons convicted of one or more of 19 violent offenses who have to serve at least 85 percent of their sentence, including murder, rape and some forms of robbery and burglary, while prohibiting government from requiring microchips implants in anyone else." *Id.* The State House rejected the bill, citing privacy and Constitutional concerns. *Id.*

students in school rather than at concerns about employer misuse.[148] The political opposition to microchip implants in these states has been guided by a desire to protect employees and children, not sex offenders.

C. *Establishing an effective microchip implant program*

Logistically, setting up such a system for microchip implants of offenders would be straightforward. First, the implants themselves are, compared to ankle monitors, relatively inexpensive. An ankle monitor can cost $800 to purchase, and $6 per month to monitor,[149] while a microchip costs about $150.[150] Second, since the State already maintains a centralized database,[151] this would only need to be coded to give each implanted offender a unique ID number. The most involved step would be installing the RFID readers at the selected locations and establishing local procedures for notifying security personnel, such as school resource officers, to the unauthorized entry. Offenders receiving implants would bear the cost of the system, similar to the procedure followed for offenders paying for SBM.[152]

This would allow funding to be put towards the most complex part of a microchip implant system, which would be the RFID pedestals needed at the entrances of locations sex offenders are barred from, the exclusion zones.[153] Sex offenders on GPS

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[148] MO. REV. STAT. § 167.168(1) (2014). ("Radio frequency identification technology, students not required to use identification device to monitor or track student location. No school district shall require a student to use an identification device that uses radio frequency identification technology, or similar technology, to identify the student, transmit information regarding the student, or monitor or track the location of the student."); *see also* Stefan P. Schropp, *Biometric Data Collection and RFID Tracking in Schools: A Reasoned Approach to Reasonable Expectations of Privacy*, 94 N.C. L. REV. 1068, 1074 (2016) (providing that these banned RFID devices were not implantable microchips, but sewn into backpacks or embedded in their student).

[149] Derek Gilna & Christopher Zoukis, *Electronic Monitoring Becomes More Widespread, but Problems Persist*, PRISON LEGAL NEWS, Oct. 2017, at 23, 24.

[150] Cyborg, *supra* note 32.

[151] State v. Bowditch, 364 N.C. 335, 338–39 (2010).

[152] N.C. GEN. STAT. § 14-208.45 (2018).

[153] *Id.* § 14-208.18.

monitoring are currently barred from entering places such as schools, children's museums, child care centers, nurseries, and playgrounds.[154] Some of these locations, such as schools and museums already have entrance procedures with staff at the door for visitors to check in. At those locations, visitors would be directed to walk through the pedestals (similar to what is done in retail stores to detect shoplifters), and any alert could be reported to local security or police. Although there are numerous locations that would require the pedestals for the system to work, unlike the GPS monitors, which need to be affixed to every offender, these need to be installed only a single time and cost about $1000.[155] If costs were shared between Federal, State, and local government as part of a Federal statute "associated legislation should give states financial incentives . . . to build an RFID infrastructure to facilitate this kind of monitoring."[156]

There are downsides to RFID implantable microchips. One issue is the signals can be blocked, which would prevent the system triggering an alarm. This is done through materials that are poor conducts of electromagnetism, preventing the reading of the implanted microchip.[157] Another is that unlike GPS ankle monitors, which sends out an alert if the offender cuts off the device,[158] an offender could remove the microchip from their body, and their

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[154] *Id.*

[155] SPECIALTY STORE SERVICES, https://www.specialtystoreservices.com/product.aspx?category=4287 (last visited Oct. 31, 2018).

[156] Rosenberg, *supra* note 137, at 358.

[157] Roger A. Grimes, *Why You Don't Need an RFID Blocking Wallet*, CSO (Nov. 22, 2017), https://www.csoonline.com/article/3199009/security/why-you-dont-need-an-rfid-blocking-wallet.html.

[158] *See ReliAlert*, GPS MONITORING SOLUTIONS, http://www.gpsmonitoring.com/relialert.html (last visited Oct. 15, 2018) ("TrackGroup's patent pending SecureCuff™ is the only security cuff in the industry specifically made for high risk offenders. It has encased, hardened steel bands designed to be highly cut resistant and provide officers an additional 10–15 minutes to be on-site before an offender can abscond. The SecureCuff™ includes a fiber-optic technology strap for tampering notification and specialized security screws to secure the strap to the device. The SecureCuff™ solution helps address the critical 'strap cut' issue so prevalent in juveniles and high-risk adult offenders. It serves to significantly reduce the number of officer response hours attempting to locate offenders who have absconded and is not offered by any other offender monitoring company.").

parole or registration officer would not necessarily know until their next check in. An answer could be to implant microchips below the triceps muscle, making it more difficult to remove.[159] There are additionally some health concerns with implantable microchips,[160] however the FDA states: "The FDA is not aware of any adverse events associated with RFID."[161] Finally, states that have passed anti-chipping statues have cited a slippery slope argument, that when involuntary insertion of microchips are legal for sex offenders, "technology can be introduced for one purpose . . . but evolve to permit other uses, like sub-dermal implants used to track our actions wherever we go."[162]

These drawbacks of microchip implants must be compared to the two alternatives: GPS ankle monitors, or unmonitored release of sex offender parolees. The holding in *Grady*, stating that lifetime SBM is unconstitutional, puts North Carolina in the difficult position of asking the public to absorb the risk that an offender will reoffend, having been released from having to wear an ankle monitor. When balancing the State's paramount interest in protecting the public from unmonitored recidivist sex offenders, against the one-time injection of an implant and the imperfections of this proposed system, demonstrates that the intrusion to the offender is likely outweighed. Implantable microchips present a

[159] Grauer, *supra* note 21.

[160] Todd Lewan, *Chip Implants Linked to Animal Tumors*, WASH. POST (Sept. 8, 2007), http://www.washingtonpost.com/wp-dyn/content/article/2007/09/08/AR2007090800997_pf.html ("A series of veterinary and toxicology studies, dating to the mid-1990s, stated that chip implants had 'induced' malignant tumors in some lab mice and rats.")*; see also* Amy Keller, *A Chip Off the Old Block: Update on Implanted Microchips*, FLA. TREND (July 7, 2010), https://www.floridatrend.com/article/3722/a-chip-off-the-old-block-update-on-implanted-microchips (providing that Verichip, the company that made the implantable microchips linked to cancer in lab animals subsequently declared bankruptcy, and has since rebranded to no longer make microchip implants).

[161] *Radio Frequency Identification (RFID)*, FOOD AND DRUG ADMIN. (Sept. 17, 2018), https://www.fda.gov/radiation-emittingproducts/radiationsafety/electromagneticcompatibilityemc/ucm116647.htm.

[162] Jennifer E. Smith, *You Can Run, But You Can't Hide: Protecting Privacy From Radio Frequency Identification Technology*, 8 N.C. J.L. & TECH. 249, 271 (2007).

viable and, possibly a constitutional alternative[163] to allow certain protective measures, such as exclusion zones, to remain in place while allowing offenders to be safely released from custody and parole.

VI. CONCLUSION

Microchip implants could be a constitutional way of continuing to protect the public if SBM is deemed unconstitutional for an offender. An upholding of the decision in *Grady* by the Supreme Court could usher in a wave of constitutional challenges to SBM for the 444 offenders in North Carolina who have completed their period of probation but are still monitored by GPS for life by statute.[164] For cases where the State is not able to justify active SBM, microchip implants provide a technological aid in protecting the public from any continued danger.

[163] *See* Kyllo v. United States, 533 U.S. 27, 33–34 (2001) ("It would be foolish to contend that the degree of privacy secured to citizens by the Fourth Amendment has been entirely unaffected by the advance of technology . . . . The question we confront today is what limits there are upon this power of technology to shrink the realm of guaranteed privacy."). Similar to *Kyllo*, the question to be answered regarding unmonitored offenders is whether the privacy implications of implantable microchips are within what society considers reasonable.

[164] N.C. DEP'T OF PUB. SAFETY, *supra* note 50, at 3.