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Remedying the Immortal: The Doctrine of Accession and Patented Human Cell Lines

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REMEDYING THE IMMORTAL: THE DOCTRINE OF ACCESSION AND PATENTED HUMAN CELL LINES

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INTRODUCTION

Justice Cardozo once remarked, "[e]very human being of adult years and sound mind has a right to determine what shall be done with [their] own body."[1] Henrietta Lacks was not afforded this right.[2] In 1951, Lacks, a thirty-one-year-old black woman, underwent treatment for cervical cancer at Johns Hopkins.[3] Dr. Lawrence Wharton took a sample of Lacks's cervical tumor without her knowledge or consent.[4] Soon thereafter, Dr. George Gey, a prominent cancer researcher, discovered that Lacks's cells were far from ordinary: they were immortal, naturally replicating forever.[5] Today, Lacks's cells, or HeLa cells, are found in virtually every biomedical lab around the

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1 Schloendorff v. Soc'y of N.Y. Hosp., 105 N.E. 92, 93 (N.Y. 1914).

2 *See* REBECCA SKLOOT, THE IMMORTAL LIFE OF HENRIETTA LACKS 197–98 (2010) ("Henrietta was a black woman born of slavery and sharecropping who fled north for prosperity, only to have her cells used as tools by white scientists without her consent.").

3 *Id.* at 31–33, 65.

4 *See The Legacy of Henrietta Lacks*, JOHNS HOPKINS MED., https://www.hopkinsmedicine.org/henriettalacks/ [https://perma.cc/9W25-4H6V]; SKLOOT, *supra* note 2, at 33, 197–98.

5 SKLOOT, *supra* note 2, at 30, 40–41 ("They kept growing like nothing anyone had seen, doubling their numbers every twenty-four hours, stacking hundreds on top of hundreds, accumulating by the millions. . . . They grew twenty times faster than Henrietta's normal cells . . . . [Her] cancer cells [were] unstoppable.").

world.[6] More than 17,000 patents involve HeLa cells.[7] Indeed, Lacks's cells are behind some of the most important modern medical accomplishments—the polio vaccine, genetic mapping, and the COVID-19 vaccines.[8] Billions of people around the globe owe their lives, or at least their longevity, to Lacks's cells.[9] Accordingly, the profits reaped from the innovation borne of HeLa cells are so extensive the sum is effectively incalculable.[10] Despite this, Lacks died extremely poor, and she was buried in an unmarked grave.[11] Today, her descendants are not even able to afford health insurance.[12]

Seventy years after Dr. Gey detected HeLa's novel capabilities,[13] the Estate of Henrietta Lacks is suing Thermo Fisher Scientific Inc. ("Thermo Fisher"). On October 4, 2021, Henrietta Lacks's descendants levied a single cause of action against the biotechnology giant—unjust enrichment.[14] Plaintiff expounds a harrowing narrative of racial exploitation and injustice.[15] All efforts are made to emphasize the woman behind the cold, clinical cells.[16] Thermo Fisher, conversely, is cast as an opportunistic and unscrupulous adversary: "Thermo Fisher Scientific acknowledges 'the widespread but unsanctioned use of HeLa cells from Henrietta Lacks.' . . . [Its] business is to commercialize

6 *See 'Immortal' Cells of Henrietta Lacks Live on in Labs*, NPR (Dec. 13, 2010, 1:00 PM), https://www.npr.org/2010/12/13/132030076/henrietta-lacks-immortal-cells-live-on-in-labs [https://perma.cc/265Y-ZA39].

7 SKLOOT, *supra* note 2, at 194.

8 *See Henrietta Lacks' Estate Sued a Company Saying It Used Her 'Stolen' Cells for Research*, NPR (Oct. 4, 2021, 9:32 PM), https://www.npr.org/2021/10/04/1043219867/henrietta-lacks-estate-sued-stolen-cells [https://perma.cc/7ZAN-243P].

9 *See* Hayley Virgil, *Remembering Henrietta Lacks: Progressing Clinical Cancer Research and Repairing Trust in the Medical Community*, ONCLIVE (Feb. 26, 2021), https://www.onclive.com/view/remembering-henrietta-lacks-progressing-clinical-cancer-research-and-repairing-trust-in-the-medical-community [https://perma.cc/5HB7-QLKS] ("[T]he research that emerged from the discovery of the HeLa cell line has helped to prevent 4.5 billion global infections and 10.3 million global deaths . . . .").

10 Jim Axelrod, *The Immortal Henrietta Lacks*, CBS NEWS (Mar. 15, 2010, 1:20 PM), https://www.cbsnews.com/news/the-immortal-henrietta-lacks/ [https://perma.cc/ME9P-TN5V]. *But see* Civil Complaint & Request for Jury Trial at 10, Estate of Lacks v. Thermo Fisher Sci. Inc., No. 21-cv-02524 (D. Md. Oct. 4, 2021) (alleging that the profits reaped from HeLa might be on the order of billions of dollars: "Ms. Lacks' estate and family never received any part of the billions of dollars that HeLa cells brought (and continue to bring) to many companies").

11 *See* Civil Complaint & Request for Jury Trial, *supra* note 10, at 9.

12 *See* SKLOOT, *supra* note 2, at 168.

13 *See The Legacy of Henrietta Lacks*, *supra* note 4 (explaining how unlike all other previous samples tested in the Gey laboratory, Lacks's cells survived outside of her body and continuously divided); *see also* Civil Complaint & Request for Jury Trial, *supra* note 10, at 3.

14 Civil Complaint & Request for Jury Trial, *supra* note 10, at 5.

15 *See id.* at 7–8.

16 *See id.* at 12.

Henrietta Lacks' cells—her living bodily tissue—without the consent of or providing compensation to Ms. Lacks' Estate."[17] Plaintiff concludes with a colossal flourish, a prodigious ask: it requests that the Court order Thermo Fisher to "disgorge the full amount of its net profits obtained by commercializing the HeLa cell line to the Estate of Henrietta Lacks" and permanently enjoin the company from using the HeLa cell line without permission of the Estate.[18]

The case of Henrietta Lacks may appear at first blush to be an isolated circumstance—it is not.[19] The stories of John Moore,[20] Ted Slavin,[21] and Dorothy Garber[22] militate against construing Lacks as the rare story. And, while some may think that doctors taking tissues from patients without their knowledge or consent is a thing of the past, they are mistaken. Many Americans do not realize that "[w]hen you go to the doctor for a routine blood test or mole removal, . . . appendectomy, [or] tonsillectomy . . . the stuff you leave behind doesn't always get thrown out. Doctors, hospitals and laboratories keep them. . . . [Only] [s]ome get consent with admission forms . . . ."[23] Perhaps more surprising, "[t]oday most Americans have their tissue on file somewhere."[24] Indeed, in 1999, the RAND Corporation circulated a report, which estimated that more than 307 million tissue samples from more than 178 million people are stored in the United States.[25] The report further assessed that each year the number of samples would increase by twenty million.[26] Thus, the issues confronting Henrietta Lacks's

17 *Id.* at 11–12.

18 *Id.* at 13.

19 *See* Mary Taylor Danforth, *Cells, Sales, and Royalties: The Patient's Right to a Portion of the Profits*, 6 YALE L. & POL'Y REV. 179, 180 (1988) ("Issues raised by Moore's case are likely to reappear in the near future. According to a Commerce Department forecast, the market for genetically engineered products will amount to tens of billions of dollars by the 1990s.").

20 *See generally* Dennis McLellan, *John Moore, 56; Sued to Share Profits from His Cells*, L.A. TIMES (Oct. 13, 2001, 12:00 AM), https://www.latimes.com/archives/la-xpm-2001-oct-13-me-56770-story.html [https://perma.cc/PP9B-NMFC].

21 *See generally* Baruch S. Blumberg, Irving Millman, W. Thomas London & Other Members of the Div. of Clinical Rsch. Fox Chase Cancer Ctr., Letter to the Editor, *Ted Slavin's Blood and the Development of HBV Vaccine*, 312 NEW ENG. J. MED. 189 (1985).

22 *See generally* United States v. Garber, 589 F.2d 843 (5th Cir. 1979).

23 Rebecca Skloot, *Taking the Least of You*, N.Y. TIMES MAG. (Apr. 16, 2006), https://www.nytimes.com/2006/04/16/magazine/taking-the-least-of-you.html [https://perma.cc/UA4N-UDVV].

24 *Id.*

25 *Id.*

26 *Id.* ("These samples . . . [a]re stored at military facilities, the F.B.I. and the National Institutes of Health. They're in biotech companies and most hospitals. Biobanks store everything from appendixes, ovaries and skin . . . . Not to mention blood samples taken from most children born in the United States since the late 60's, when states started mandating screening newborns for genetic diseases."); ELISA EISEMAN & SUSANNE B. HAGA,

family do not appear to be going away any time soon.[27] The resolution of this case may have serious ramifications for past, present, and future patients. Research conducted using human cell lines could be seriously—and disastrously—curbed.

Interestingly, however, the Estate of Henrietta Lacks's unjust enrichment claim is crumbling.[28] Judge Boardman, who is presiding over the case, is overtly skeptical: she called the Lacks Estate's claim "complicated" and explained that "under [its] theory 'there's going to be claims of unjust enrichment forever.'"[29] Therefore, unjust enrichment might not be the perfect fit here. Consequently, this Note sets out to determine the proper measure of damages owed, if any, to the Lacks family. Indeed, this is a narrow, focused exercise in establishing recompense. Certainly, this is a problem that demands prompt attention—there will be future patients.

To be clear, Thermo Fisher has filed a motion to dismiss, arguing that the statute of limitations has run—essentially that the Lacks family is too late in bringing this suit.[30] This Note does not assess the merits of that claim. Nor does this Note attempt to address the myriad of ancillary intricacies. Its focal point—its central query—is what is the Lacks family owed?

This is not necessarily a new question. Prior lawsuits seeking compensation for cellular contributions to patented cell lines have failed.[31] To be sure, courts have displayed caution in this context, betraying significant apprehension as to the potential adverse implications for scientific research:

RAND, HANDBOOK OF HUMAN TISSUE SOURCES: A NATIONAL RESOURCE OF HUMAN TISSUE SAMPLES, at xvii (1999).

27 *See* Duncan Wilson, *A Troubled Past? Reassessing Ethics in the History of Tissue Culture*, 24 HEALTH CARE ANALYSIS 246, 249, 251 (2016) (indicating that there may be thousands of unknown claims, like Lacks's, yet to come to light, and that, in 1951, "American biologist Margaret Murray, who claimed in a chapter for a tissue culture manual that the 'uses and advantages of cultured human tissues are many' and urged researchers to visit their local hospital to procure this 'almost untapped' resource" (endnote omitted)).

28 Hannah Gaskill, *Judge Weighing Motion to Dismiss Henrietta Lacks' Family Lawsuit Against Biotech Firm*, WTOP NEWS (May 17, 2022, 9:27 PM), https://wtop.com/maryland/2022/05/judge-weighing-motion-to-dismiss-henrietta-lacks-family-lawsuit-against-biotech-firm/ [https://perma.cc/PV5W-RRV3].

29 *Id.*

30 *See* Defendant Thermo Fisher Scientific Inc.'s Motion to Dismiss, Estate of Lacks v. Thermo Fisher Sci. Inc., No. 21-cv-02524 (D. Md. Dec. 16, 2021); Memorandum of Law in Support of Thermo Fisher Scientific's Motion to Dismiss, *Estate of Lacks*, No. 21-cv-02524 (D. Md. Dec. 16, 2021).

31 *See* Moore v. Regents of the Univ. of Cal., 793 P.2d 479, 497 (Cal. 1990) ("[W]e hold that the allegations of Moore's third amended complaint state a cause of action for breach of fiduciary duty or lack of informed consent, *but not conversion*." (emphasis added)).

> [T]he theory of liability . . . threatens to destroy the economic incentive to conduct important medical research. . . . [W]ith every cell sample a researcher purchases a ticket in a litigation lottery. Because liability for conversion is predicated on a continuing ownership interest, "companies are unlikely to invest heavily in developing, manufacturing, or marketing a product when uncertainty about clear title exists." . . . "[I]t is not unreasonable to conclude in these circumstances that the imposition of a harsher test for liability would not further the public interest in the development and availability of these important products."[32]

Therefore, this Note propounds the application of a yet untried theory of damages in this context: the property concept of accession. Accession is a uniquely fitting remedy here and in future cell line lawsuits because it aptly weighs the patient's desire to be remedied with the substantial, countervailing need for robust clinical research. This is a complex equilibrium—made more difficult by the convolutions and realities of cell biology.

Crucially, accession's remedy is retroactive rather than prospective: restitution is calculated based on the one-off, original trespass. Accession's retrospective nature is particularly advantageous in the immortal-human-cell-line context. Otherwise, determining damages for future iterations of these eternally replicating, regenerative, and possibly mutating cells is at best an extreme administrative burden, and at worst, infeasible.[33] With the application of accession, biotech companies do not have to fear continuous and crippling monetary penalties. Accordingly, researchers' curiosity and innovative experiments are safeguarded. Further, as explained below, accession appropriately acknowledges the intellectual contributions of the scientists, doctors, and researchers involved in the Thermo Fisher patents while simultaneously recognizing the initial trespass to Henrietta Lacks and crediting her unique cellular contribution.

Importantly, though this Note employs Henrietta Lacks as the illustrative, paradigmatic case for the theory of accession it proposes, accession can be, and should be, broadly construed to apply to all like-situated patients. Part I of this Note briefly explains the timeless human-body-as-property debate. Next, Part II addresses the concept of accession—its theoretical underpinnings, definitions, and amenability to this and other lawsuits. Part III applies accession to HeLa and develops a methodology for calculating damages in this unique setting. This Note does not pretend to present a perfectly wrought formula.

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32 *Id.* at 495–96 (first quoting OFF. OF TECH. ASSESSMENT, OTA-BA-337, NEW DEVELOPMENTS IN BIOTECHNOLOGY: OWNERSHIP OF HUMAN TISSUES AND CELLS 27 (1987); and then quoting Brown v. Superior Ct., 751 P.2d 470, 480 (Cal. 1988)).

33 *See* Gaskill, *supra* note 28.

Instead, it offers several possibilities for determining compensation. Finally, Part IV concludes this Note by addressing lingering qualms, future action, and persistent issues that require resolution.

I. A BRIEF OVERVIEW OF THE COMMERCIALIZATION OF HUMAN TISSUE DEBATE

This Note first contends that human tissue should be construed as property. Consequently, it first addresses the longstanding debate surrounding the human body as property.

The majority, concurring, and dissenting opinions expressed in *Moore v. Regents of the University of California*[34] aptly characterize the public policy, moral, and autonomous personhood arguments consistently present in the abiding commercialization-of-the-human-body dispute. While the Lacks lawsuit stemmed from a cervical tumor biopsy, John Moore's lawsuit was borne from a splenectomy.[35] Moore, who suffered from hairy-cell leukemia,[36] was advised by Dr. Golde to undergo surgery to remove his spleen to slow the progression of the disease.[37] After the operation, Dr. Golde and his team extracted tissue from the excised organ, recognizing the cells' potential value for research in cancer therapies.[38] Moore was not informed of Dr. Golde's research interest in, nor the potential cell line derived from, his spleen.[39] But, in 1984, Dr. Golde as inventor and the Regents as assignee were granted U.S. Patent No. 4,438,032 on the technology developed from Moore's spleen cells.[40] This patent generated substantial revenue through commercial arrangements with two biotech firms.[41] The patented technology using Moore's cells, generally known today as Mo or Mo T, is still sold for experimental use.[42]

Moore eventually filed an action against Dr. Golde and his research team alleging, among other causes of action, breach of physician disclosure obligations and conversion.[43] The Supreme Court of

34 *Moore*, 793 P.2d 479.

35 *Id.* at 485.

36 *Id.* at 480.

37 *Id.* at 481.

38 *See id.*

39 *See id.* at 483.

40 *Id.* at 481–82.

41 *See id.* at 482 ("Genetics Institute also agreed to pay Golde and the Regents 'at least $330,000 over three years, including a pro-rata share of [Golde's] salary and fringe benefits, in exchange for . . . exclusive access to the materials and research performed' on the cell line and products derived from it. On June 4, 1982, . . . compensation payable to Golde and the Regents was increased by $110,000.").

42 *See Mo [Mo T]*, ATCC, https://www.atcc.org/products/crl-8066 [https://perma.cc/U3DT-HUZ6].

43 *Moore*, 793 P.2d at 480.

California found for Moore with regard to the former claim, but not for conversion.[44] The majority opinion, penned by Justice Brandeis, decries Moore's conversion theory mainly on public policy grounds—"we have . . . considered the impact that expanded liability would have on activities that are important to society, such as research. . . . [T]he fear that strict product liability would frustrate pharmaceutical research led us to hold that a drug manufacturer's liability should not be measured by those standards."[45] Indeed, the majority opinion ultimately concludes that it should be the legislature that determines the question of whether or not the human body is subject to property rights and remedies.[46]

In contrast, Justice Arabian's concurrence emphasizes the "moral, philosophical and even religious values at stake,"[47] and the potential "ramifications of recognizing and enforcing a property interest in body tissues."[48] He opines that "the human vessel"[49] is the "single most venerated and protected subject in any civilized society"[50] and criticizes Moore for "equa[ting] [it] with the basest commercial commodity."[51] Justice Arabian refuses to back a theory of recovery that "urges [this Court] to commingle the sacred with the profane."[52]

Justice Broussard, partly concurring with and partly dissenting from the majority, moves away from the spiritual realm and back to property considerations. He takes issue with the majority's conclusion that Moore had no right to his tissue after it was removed from his body:

> [U]nder traditional common law principles . . . this right of a patient to control the future use of his organ is protected by the law of conversion. . . . [C]onversion protects an individual not only against improper interference with the right of possession of his property but also against unauthorized use of his property . . . .[53]

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44 *Id.*

45 *Id.* at 495 (citing Brown v. Superior Ct., 751 P.2d 470, 480 (Cal. 1988)).

46 *Id.* at 496 ("If the scientific users of human cells are to be held liable for failing to investigate the consensual pedigree of their raw materials, we believe the Legislature should make that decision. Complex policy choices affecting all society are involved, and '[l]egislatures, in making such policy decisions, have the ability to gather empirical evidence, solicit the advice of experts, and hold hearings at which all interested parties present evidence and express their views . . . .'") (quoting Foley v. Interactive Data Corp., 765 P.2d 373, 397 n.31 (Cal. 1988)).

47 *Id.* at 498 (Arabian, J., concurring).

48 *Id.*

49 *Id.* at 497.

50 *Id.*

51 *Id.*

52 *Id.*

53 *Id.* at 502 (Broussard, J., concurring and dissenting).

Finally, Justice Mosk argues in his dissent that John Moore should have a recognized property interest in his spleen because

> [t]he concepts of property and ownership in our law are extremely broad. . . . "The term 'property' is sufficiently comprehensive to include every species of estate, real and personal, and everything which one person can own and transfer to another. It extends to every species of right and interest capable of being enjoyed as such upon which it is practicable to place a money value."[54]

Thus, *Moore* efficiently illustrates both sides of the human-body-as-property debate. On the one hand, there are those concerned with public policy and moral implications, evidenced by Justice Brandeis and Justice Arabian, respectively. On the other hand, there are those preoccupied with rights and the ethical imperative to honor individual autonomy—the position manifested by Justice Mosk and, to a lesser extent, Justice Broussard. The *Moore* opinion is not exhaustive—it does not include every qualm or advocation. Rather, it generally depicts the context in which the HeLa lawsuit, and potential forthcoming cases, sit.

This Note takes a position quite in the middle of that articulated by Justice Brandeis in his majority opinion, and that of Justice Mosk's dissent. Fairness dictates that if one's tissue is valuable, and a scientist is able to reap the rewards, the owner should too. But, this must be balanced with the weighty societal need for continued research and innovation. It is this delicate equilibrium that the accession doctrine uniquely and capably achieves.

II. ACCESSION DEFINED

Accession is a physical property doctrine with roots in Roman civil law.[55] It is a concept that once held great esteem, but has settled into relative obscurity in modern American property law.[56] Importantly, to forestall any confusion, this Note will pay specific attention to the *doctrine* of accession. It will not address the *principle* of accession, which grants title to some asset based on its relationship to something else already owned.[57]

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54 *Id.* at 509 (Mosk, J., dissenting) (quoting Yuba River Power Co. v. Nev. Irrigation Dist., 279 P. 128, 129 (Cal. 1929)).

55 Thomas W. Merrill, *Accession and Original Ownership*, 1 J. LEGAL ANALYSIS 459, 463 (2009).

56 *Id.* at 460 ("The principle of accession once commanded the attention of thinkers of the first rank. Hugo Grotius, Samuel Pufendorf, and David Hume all had interesting things to say about accession. This tradition has died out, at least in English language literature about property rights.").

57 *See id.* at 466.

The *doctrine* of accession is generally defined as "the right of ownership which one acquires either as a result of his labor on or his improvement of an article."[58] While the doctrine of accession takes many forms,[59] this Note will primarily analyze the concept of *specification*, "which comprehends the case of one who by his labor and skill, has created a new product out of another's article, as where marble is carved into a statue or cloth made into a dress. It is frequently referred to as accession by skill or labor."[60]

And, *specification* is further subject to distinct interpretations.[61] First, the *physical identity theory* dictates that if the original, taken article has been completely altered, the owner cannot recover it in the new form. This is the case even when the original taking was willfully done by a wrongdoer.[62] William Blackstone explained this theory further, including the measure of damages owed to the original owner: "[I]f the thing . . . was changed into a different species, as by making wine, oil, or bread out of another's grapes, olives, or wheat, it belonged to the new operator; who was only to make a satisfaction to the former proprietor for the materials, which he had so converted."[63] In other words, the original owner is not entitled to the value of the transformed material, rather is recompensed for the original trespass—for the original value of the goods.

Next, the *comparative value test.* Under this theory, the values of the original and improved items are compared to determine whether the "improver may take title by substantially improving the value of the materials."[64] If the improved item is found to exceed the unaltered item in value, the improver retains the item, and the original owner must be remedied. Once again, the initial possessor must be compensated for the value of the original material.[65]

While these concepts were traditionally treated as alternate, equally viable theories, courts in the United States have created a distinctive American accession principle.[66] First, American courts have a particular affinity for the *comparative value test*, and have largely

58 Earl C. Arnold, *The Law of Accession of Personal Property*, 22 COLUM. L. REV. 103, 103 (1922).

59 *Id.* (explaining the distinct accession concepts of specification, accession or adjunction, and confusion).

60 *Id.*

61 *Id.* at 105–09 (illustrating the differences between the physical identity theory, the comparative value theory, and a third theory involving situations where the original owner may recover his article when taken by a willful trespasser).

62 *See* D. BARLOW BURKE, JR., PERSONAL PROPERTY IN A NUTSHELL 294 (1983).

63 2 WILLIAM BACKSTONE, COMMENTARIES *404.

64 Note, *Accession on the Frontiers of Property*, 133 HARV. L. REV. 2381, 2383 (2020).

65 *See id.* at 2383–84.

66 *Id.*

discarded the *physical identity theory* because of its difficult application and its propensity for producing "arbitrary and unjust" results.[67] Indeed, the majority of historic cases applying the *physical identity theory* vest ownership back in the original owner: the improver rarely made a change sufficient to warrant ownership of the new article. This was the case even when raw lumber was converted to coal,[68] soil to brick,[69] or felled trees to valuable railroad crossties.[70] Even though the defining principle of the *physical identity theory* was that "a permanent alteration of the component parts must have been made, so that any attempt to change them again to their original form would . . . [be] impracticable,"[71] American courts invariably found for the original owner. The courts were reluctant to grant title to the improvers in those cases because each had taken the original materials willfully and purposefully for their own gain.[72] Hence, under the American rule, only innocent, good-faith improvers who pass the *comparative value test* can take title to the new product.[73]

The famous case of *Wetherbee v. Green* demonstrates the application of the American accession doctrine.[74] Wetherbee, by mistake and in good faith, cut timber from Green's land.[75] The raw timber was worth $25, whereas the hoops Wetherbee eventually fashioned from it

67 RAY ANDREWS BROWN, A TREATISE ON THE LAW OF PERSONAL PROPERTY § 24, at 47 (1936).

68 *See* Riddle v. Driver, 12 Ala. 590, 591–92 (1847).

69 *See* Lampton's Ex'rs v. Preston's Ex'rs, 24 Ky. (1 J.J. Marsh.) 454, 470 (1829).

70 *See* Strubbee v. Trs. Cincinnati Ry., 78 Ky. 481, 488 (1880).

71 Arnold, *supra* note 58, at 105 (citing 2 JAMES SCHOULER, A TREATISE ON THE LAW OF PERSONAL PROPERTY § 32, at 34 (Boston, Little, Brown, & Co. 3d ed. 1896)).

72 *See, e.g.*, *Strubbee*, 78 Ky. at 489. This case makes abundantly clear the difference in treatment to be applied to the unintentional versus the intentional trespasser, and the policy values undergirding this differential application: "where the value of the thing has been enhanced by the labor and skill employed to adapt the material to a more useful purpose, under a mistake as to right of ownership, the real owner will be confined to the value of the original article," but "[i]f the wanton trespasser is permitted to dispose of the property in a case like this to an innocent purchaser for three times the value of the timber in the tree . . . when so well remunerated a second trespass will be committed with a view to similar results." *Id.* (citing Heard v. James, 49 Miss. 236 (1873)).

73 *See* Wetherbee v. Green, 22 Mich. 311, 315–16 (1871) ("The New York cases of *Betts v. Lee*, *Curtis v. Groat*, and *Chandler v. Edson*, were all cases where the willful trespasser was held to have acquired no property by a very radical conversion, and in *Silsbury v. McCoon*, the whole subject is very fully examined, and Ruggles J., in delivering the opinion of the court, says that the common law and the civil law agree 'that if the chattel wrongfully taken come into the hands of an *innocent holder* who, believing himself to be the owner, converts the chattel into a thing of different species, so that its identity is destroyed, the original owner cannot reclaim it.'" (citations omitted)).

74 *Id.* at 320.

75 *See id.* at 312–13.

were valued at $700 each.[76] Justice Cooley determined, thus, that "in the present case, where the defendant's labor . . . will appear to have given the timber in its present condition nearly all its value, all the grounds of equity exist which influence the courts in recognizing a change of title under any circumstances."[77] Consequently, *Wetherbee* stands for the proposition that if the value of the improver's labor "has swallowed up and rendered insignificant the value of the original materials," transformation has been achieved and legal title transfers to the improver.[78] Within this analysis, "[w]hichever party contributes the greater part of the value takes title to the improved item."[79] But, importantly, Wetherbee was required to compensate Green for the raw lumber he had inadvertently, but wrongly, taken: "the remedy of the plaintiff was an action to recover damages for the unintentional trespass."[80]

III. APPLYING ACCESSION TO HELA

Henrietta Lacks's cells are amenable to application of the accession doctrine. Indeed, Lacks's cells can be analogized to Green's timber. And, Dr. Gey and Thermo Fisher fittingly play the role of the unintentional, good-faith trespasser, Wetherbee.

In *Wetherbee*, Wetherbee removed lumber, the raw material, from Green's land. Here, the Johns Hopkins doctors took cells, the raw material, from Lacks's body. There, Wetherbee, through labor and personal expense vastly modified the lumber, and irrevocably changed it into barrel hoops. Here, Dr. Gey and his team through experimentation, invention, and great personal and institutional expense, manipulated *in vitro* conditions such that Lacks's cells were able to survive, eternally, outside her body.[81] Wetherbee was granted legal title to the hoops, but he paid damages to Green for the price of the original, raw

76 *See id.* at 313.

77 *Id.* at 321.

78 *Id.* at 320.

79 Peter Lee, *The Accession Insight and Patent Infringement Remedies*, 110 MICH. L. REV. 175, 199 (2011).

80 *Wetherbee*, 22 Mich. at 321.

81 *See* SKLOOT, *supra* note 2, at 39 (Dr. George Gey's "roller-tube culturing technique [was] *his most important invention*. It involved a large wooden roller drum, a cylinder with holes for special test tubes called roller tubes. The drum, which Gey called the 'whirligig,' turned like a cement mixer twenty-four hours a day, rotating so slowly it made only two full turns an hour, sometimes less. For Gey, the rotation was crucial: he believed that culture medium needed to be in constant motion, like blood and fluids in the body, which flow around cells, transporting waste and nutrients." (emphasis added)); *see also* Charles T. Ambrose, *The Tissue Culture Laboratory of Dr. George Otto Gey 60 Yrs Ago as Recalled by a Former Student*, 53 IN VITRO CELLULAR & DEVELOPMENTAL BIOLOGY - ANIMAL 467, 471–72 (2017).

lumber.[82] Likewise, Lacks should not be entitled to the profits of the improved cells, and the patented technologies made therefrom; rather she should be granted damages for her initial contribution of cells to each patent. Green's damages for his raw lumber were calculated using the market price for lumber at the time.[83] Correspondingly, Lacks's damages should be calculated as to the market price for her bare cells prior to the scientists' modifications. Consequently, the doctrine of accession acknowledges the trespass and exploitation of the patient's body, compensates her for her contribution of raw material, and concurrently acknowledges the scientists' intellectual input.

In principle, the American doctrine of accession seems to be a perfect fit for the HeLa lawsuit and cell line lawsuits broadly. Equity, desert, and restitution are all seemingly satisfied.[84] Yet, some scholars argue that the *comparative value test* is technically "difficult to apply in the biotechnology context."[85] They are particularly preoccupied with determining the value of the raw cells and parsing the relative contributions of the donor and the scientist:

> [T]he value of the unimproved human tissue may be relatively small. Yet when the property is a cell line derived from human tissue, the majority of its value may lie in the unique traits of the original cells. How then does one determine the relative contribution of the researcher and the donor?[86]

There are inherent challenges in determining the "value" of human tissue, and establishing "contribution," but these concepts are not as difficult to fathom as these scholars suggest. Further, the skeptical scholars identify the importance of the "good faith issue" because "[t]he measure of the patient's damages in an accession depends on whether the researcher's act was willful or innocent."[87] This Note takes the "good faith" and the "value" issues in turn.

A. The Good Faith Issue

First, in order for the American accession doctrine to be applicable to the case of Henrietta Lacks, the taking of the original material

82 *See Wetherbee*, 22 Mich. at 321.

83 *See id.* at 313 (Wetherbee relied on market information to determine the disparate value of the raw lumber and his barrel hoops as "he offered to show that the standing timber was worth twenty-five dollars only, while the hoops replevied were shown by the evidence to be worth near seven hundred dollars.").

84 *See* Note, *supra* note 64, at 2385–86 (explaining the general properties of accession, including equity, desert, restitution, and divided entitlement).

85 Roy Hardiman, Comment, *Toward the Right of Commerciality: Recognizing Property Rights in the Commercial Value of Human Tissue*, 34 UCLA L. REV. 207, 253 (1986).

86 *Id.* at 254.

87 *Id.* at 255.

must have been in good faith. Indeed, the American formulation of accession stipulates that if the original material was taken in bad faith, the doctrine cannot be employed.[88] In Lacks's case, the actual taking occurred at Johns Hopkins, by Dr. Lawrence Wharton, under the direction of Dr. Richard Wesley TeLinde and Dr. George Gey.[89] Despite the controversial extraction of Lacks's cells, as explained below, this original taking was in good faith. Thus, accession may be applied to HeLa.

As an initial matter, there were no informed consent laws at the time Lacks's cells were taken.[90] While this is no excuse for the regrettable violation of Lacks's rights, taking tissue samples from patients without their knowledge was a prevalent if not ordinary practice for the time period.[91] Dr. Gey and the doctors around him might have had moral qualms, but nothing in the law, nor social norms, condemned their activities.[92]

Second, the evidence suggests that Dr. Gey, who is responsible for the creation of HeLa, was interested in generating an immortal cell line not for personal gain, but rather for the good of science.[93] In fact, prior to discovering HeLa, "Gey and his wife, Margaret, had spent the last three decades working to grow malignant cells outside the body, hoping to use them to find cancer's cause and cure."[94] Dr. Gey's unwillingness to accept money for the discovery of HeLa[95] suggests that he viewed the cell line not as his own private goldmine, but rather as

88 *See supra* notes 72–73.

89 SKLOOT, *supra* note 2, at 17, 33.

90 *See id.* at 132 ("The term *informed consent* first appeared in court documents in 1957, in a civil court ruling on the case of a patient named Martin Salgo.").

91 *Id.* at 29–31 ("*Like many doctors of his era*, TeLinde often used patients from the public wards for research, usually without their knowledge. Many scientists believed that since patients were treated for free in the public wards, it was fair to use them as research subjects as a form of payment. And as Howard Jones once wrote, 'Hopkins, with its large indigent black population, had no dearth of clinical material.'" (emphasis added)).

92 *See* Engelbert Buxbaum, Reply to *The Unique of HeLa Cell Line*, RESEARCHGATE (May 5, 2020), https://www.researchgate.net/post/The_unique_of_Hela_cell_line [https://perma.cc/B4LN-NNBQ] ("It is important to note that the *Declaration of Helsinki* ([the] foundation for modern ethics on research with human subjects) was passed only [in] 1964, more than a decade after [Lacks's] death. Today, we would have separate ethics committee approval for each study, and would require free and informed consent of each patient for each and every study. However, you have to judge human actions by the rules valid at the time they were done, and by those standards, the hospital and the researchers involved acted appropriately and [humanely].").

93 *See* SKLOOT, *supra* note 2, at 30.

94 *Id.*

95 *See id.* at 194 ("Various spokespeople for Johns Hopkins, including at least one past university president, have issued statements to me and other journalists over the years saying that Hopkins never made a cent off HeLa cells, that George Gey gave them all away for free. There's no record of Hopkins and Gey accepting money for HeLa cells . . . .").

an experimental treasure. This characterization is further supported by the fact that, initially, Dr. Gey kept no HeLa cells for himself—he gave them all away to other researchers engaged in lifesaving investigations.[96] Dr. Gey's taking of tissue samples from unknowing patients thus does not resemble the "willful wrongdoer" sneaking onto another's land, cutting timber, and making railroad crossties for personal profit.[97] In short, Dr. Gey took Lacks's cells and developed the HeLa cell line not for wealth or fame,[98] but for altruistic motives.

But, the Estate of Henrietta Lacks is not suing Dr. George Gey or Johns Hopkins. It sued Thermo Fisher. The biotech company is decades removed from the actual "taking" of Lacks's cells. However, the Estate accuses Thermo Fisher in Dr. Gey's place: "[d]espite their awareness of the origins of the HeLa cell line, Thermo Fisher Scientific made the choice to use Henrietta Lacks' body for their own profit."[99] After all, the actual "trespassers" in this case are long deceased.[100] Thermo Fisher is the natural proxy for Dr. Gey and his Johns Hopkins team. Lacks can thus be seen as contributing her raw, bare cells to each of Thermo Fisher's twelve patented technologies.

Thermo Fisher may be attributed good faith in many of the same ways Dr. Gey was. Just as there were no informed consent laws to inhibit Dr. Gey's practices, there are no laws nor precedent to suggest that Thermo Fisher's use and manipulation of the HeLa cell line is wrong.[101] Indeed, HeLa is the most commonly used human cell line in research today.[102] Second, while Thermo Fisher is a biotech giant and amasses billions of dollars of profit a year, its vital contributions during the COVID-19 pandemic reveal its fundamental purpose: to dispense lifesaving tools and technology.[103] To be sure, Thermo Fisher's

96 *Id.* at 140 ("[I]n his initial excitement, Gey had given all of the original HeLa cells to other researchers and kept none for himself. He eventually tracked some down in the lab of William Scherer, who'd used some of the original HeLa sample in their polio research.").

97 *See* Strubbee v. Trs. Cincinnati Ry., 78 Ky. 481, 482 (1880).

98 In fact, Dr. George Gey lived humbly and died a modestly wealthy man. *See* SKLOOT, *supra* note 2, at 193–94.

99 Civil Complaint & Request for Jury Trial, *supra* note 10, at 11.

100 *See, e.g.*, *George O. Gey, 71, Cancer Lab Head: Cell Biologist, Honored for Tissue Culture Is Dead*, N.Y. TIMES (Nov. 9, 1970), https://www.nytimes.com/1970/11/09/archives/george-o-gey-71-cancer-lab-head-cell-biologist-honored-for-tissue.html [https://perma.cc/8S5K-9R9J] (mourning the death of Dr. George Gey on November 8, 1970).

101 *See* Hardiman, *supra* note 85, at 255 ("Neither courts nor legislatures have elaborated law governing property rights in human tissue and until they do, the researcher could argue that he was operating under the mistaken belief that he possessed title to the tissue.").

102 *HeLa Cells (1951)*, BRITISH SOC'Y FOR IMMUNOLOGY, https://www.immunology.org/hela-cells-1951/ [https://perma.cc/EED4-WK6Y].

103 *See Thermo Fisher Scientific Commits USD 10 Million to Support India's Fight Against COVID-19*, BUS. STANDARD (May 12, 2021, 11:31 PM), https://www.business-standard.com

HeLa patented technologies account for only a minute fraction of its profits each year.[104] Therefore, its motive to sell HeLa cannot be driven mainly by monetary interests. In fact, scientists could turn to numerous other vendors besides Thermo Fisher to obtain HeLa.[105] Thermo Fisher sells HeLa, not one of its "cash cows," to provide a useful research tool for scientists. Thus, the doctrine of accession may be appropriately applied in this case because all potential "takers," "improvers," or "converters," did so in good faith.

Importantly, the issue of good faith may not always be so clear-cut. Take the case of John Moore, his spleen, and Dr. Golde: "when [Moore] inquired as to whether there was any possible or potential commercial or financial value or significance of his Blood and Bodily Substances . . . the defendants repeatedly and affirmatively represented to [Moore] that there was no commercial or financial value to his Blood and Bodily Substances."[106] The record, therefore, indicates that Dr. Golde may not have been an entirely "unintentional" trespasser. Nevertheless, scientists engaged in cell line development should be *presumed* to have good-faith intent. Indeed, it is not an exceedingly lucrative line of work,[107] rather these scientists toil to provide useful tools to facilitate third-party medical innovation.[108] It is inherently a rather magnanimous occupation. Accordingly, this Note contends that medical professionals—those working to sustain the health of our communities—should automatically be ascribed good faith.[109] Nonetheless, the intent of the "trespasser" should be closely analyzed

/content/press-releases-ani/thermo-fisher-scientific-commits-usd-10-million-to-support-india-s-fight-against-covid-19–121051200860_1.html [https://perma.cc/35S4-AJUW].

104 *Compare Thermo Fisher Scientific Reports Second Quarter 2021 Results*, THERMO FISHER SCI. (July 28, 2021), https://ir.thermofisher.com/investors/news-events/news/news-details/2021/Thermo-Fisher-Scientific-Reports-Second-Quarter-2021-Results/default.aspx [https://perma.cc/DF6R-E4YE], *with* Civil Complaint & Request for Jury Trial, *supra* note 10, at 12.

105 *See, e.g.*, *Human Cells*, ATCC, https://www.atcc.org/cell-products/human-cells#t=productTab&numberOfResults=24 [https://perma.cc/7TPL-BKRZ].

106 Moore v. Regents of the Univ. of Cal., 793 P.2d 479, 485–86 (Cal. 1990).

107 *See* Danforth, *supra* note 19, at 179 n.2 ("Dr. Golde and the University of California Board of Regents sold exclusive access to Moore's cells and research being performed on them to Genetics Institute for a total of $330,000, payable over a three-year period. Golde became a consultant to Genetics Institute in exchange for options on 75,000 shares of the company's stock at one cent per share. Another biotechnology company, Sandoz Pharmaceuticals Corporation, paid $110,000 to Golde and the Regents to share in the exclusive access to Moore's cells for use in clinical testing and marketing.").

108 *See id.* at 179 n.1 ("A number of biologically valuable substances have been produced from the Mo-cell line. Among these are lymphokines, which are useful in the treatment of blood diseases, cancers, and immune system deficiencies, as well as other blood factors that are used in the development and proliferation of specialized blood cells.").

109 Hardiman, *supra* note 85, at 255 ("In most instances, the researcher probably would be an innocent converter.").

in each case[110] such that the "good faith" presumption is a rebuttable one.

B. The "Value" of the Tissue Issue

1. The Comparative "Value" of the Tissue and Scientists' Contribution

Next, applying the American accession doctrine necessarily involves using the *comparative value test*. Thus, the salient questions: what is the monetary value of the raw material here? What are Lacks's cells worth in dollars? And, how does this figure compare to the scientists' input?

The HeLa cell line is "nonseparable," and thus it seems "impossible to determine who is 'responsible' for what portion of the final output. Who is to say [whose] contribution was more valuable, when [both are] essential . . . ?"[111] This difficulty is easy to solve, however, when the actual inputs are scrutinized. The assumption should be that the scientist contributed more than the original owner.

First, it is worth mentioning that cells are widely regarded as *tools* for scientific innovation.[112] Rebecca Skloot describes HeLa as "an optimal *tool* for synthesizing and studying any number of things in culture . . . . [T]he fact that HeLa was malignant just made it *more* useful."[113] Without researchers, scientists, doctors—without human intellect injected—cells are just mass. The analogy of Microsoft Word is apt here. Without human curiosity, intelligence, and input, Microsoft Word is a blank page on your desktop. Add human creativity and intelligence—you have a poem, an essay, a book. Likewise, with a cell line like HeLa—with its genome so thoroughly explored[114]—each cell is a blank page, awaiting the spark of human innovation. Hence, human intellect represents a significant portion of those millions of

110 Of course, if the taking was done in bad faith, it is a nonstarter: the accession doctrine is inapplicable. *See supra* notes 72–73.

111 Margaret M. Blair & Lynn A. Stout, *A Team Production Theory of Corporate Law*, 85 VA. L. REV. 247, 266 (1999).

112 *See* Gail P. Risbridger, Editorial, *Human Cell Lines as Tools of Our Trade: "Laying It on the (Cell) Line"*, 29 MOLECULAR ENDOCRINOLOGY 1 (2015) ("For decades, cell lines have been the workhorse of programs to identify and interrogate mechanisms of action, discover and/or test drug/compounds/factors, and show relevance of findings to human disease.").

113 SKLOOT, *supra* note 2, at 97 (first emphasis added); *Significant Research Advances Enabled by HeLa Cells*, NIH, https://osp.od.nih.gov/scientific-sharing/hela-cells-timeline/ [https://perma.cc/FU6E-646A].

114 *See* Ewen Callaway, *Most Popular Human Cell in Science Gets Sequenced*, NATURE (Mar. 15, 2013), https://www.nature.com/articles/nature.2013.12609/ [https://perma.cc/8HDU-9UCC].

dollars accrued from the commercialization of HeLa and the patented technologies derived therefrom.

Further grounds for ascribing comparatively higher "value" to the scientists' input is that, due to modern science and technology, cell lines are essentially fungible.[115] Scientists can manipulate virtually any-person-off-the-street's cells to evoke the characteristics they want.[116] For instance, today, there are several methods for generating immortal cell lines.[117] Indeed, numerous other naturally occurring immortal human cell lines have been discovered since HeLa,[118] as have immortal animal cell lines,[119] while still other cell lines have been induced to immortality through genetic mutation.[120] This is because we now know what makes HeLa so special: a telomerase mutation.[121] Lacks's cervical tumor cells divide again and again because of the expression of an overactive telomerase that rebuilds telomeres after each division.[122] This mutation prevents cellular aging and cellular senescence, which consequently allows for the perpetual division of cells.[123] In short,

115 *See* Kendall Powell, *Biology from Scratch: Built from the Bottom up, Synthetic Cells Could Reveal the Boundaries of Life*, 563 NATURE 172, 175 (2018); U.S. NAT'L LIBR. MED., HELP ME UNDERSTAND GENETICS: GENOMIC RESEARCH 4 (2020), https://medlineplus.gov/download/genetics/understanding/genomicresearch.pdf [https://perma.cc/8DW7-GS85] (explaining that "[t]hese technologies allow genetic material to be added, removed, or altered at particular locations in the genome").

116 U.S. NAT'L LIB. MED., *supra* note 115.

117 *See* Muhammad Irfan Maqsood, Maryam M. Matin, Ahmad Reza Bahrami & Mohammad M. Ghasroldasht, Mini-Review, *Immortality of Cell Lines: Challenges and Advantages of Establishment*, 37 CELL BIOLOGY INT'L 1038, 1038 (2013); *see generally* Werner Henle & Gertrude Henle, *Epidemiologic Aspects of Epstein-Barr Virus (EBV)-Associated Diseases*, 354 ANNALS N.Y. ACAD. SCIS. 326 (1980) (explaining how the introduction of a viral gene that partially deregulates the cell cycle, like the Epstein-Barr virus, can immortalize B lymphocytes by infection); Andrea G. Bodnar et al., *Extension of Life-Span by Introduction of Telomerase into Normal Human Cells*, 279 SCIENCE 349 (1998) (explaining that cell lines can be induced to immortality through the artificial expression of key proteins, like telomerase, which prevents degradation of chromosomes).

118 *See, e.g.*, MATT CARTER & JENNIFER SHIEH, GUIDE TO RESEARCH TECHNIQUES IN NEUROSCIENCE 299–300 (2d ed. 2015) (describing SH-SY5Y, a commonly used immortal human cell line derived from a human neuroblastoma).

119 *Id.* 3T3 cells, for instance, are immortal cells derived from mouse embryonic fibroblast. As another example, MDCK is an immortal cell line derived from dog kidney epithelial cells. *Id.*

120 *Id.* (illustrating, for example, the benefits of the 293/293T/HEK-293T cell line derived from a human embryonic kidney).

121 *See* Maria A. Cerone, Chantal Autexier, J. Arturo Londoño-Vallejo & Silvia Bacchetti, *A Human Cell Line That Maintains Telomeres in the Absence of Telomerase and of Key Markers of ALT*, 24 ONCOGENE 7893, 7893 (2005); *see also* Jacqueline Ronson, *The Science Behind Henrietta Lacks' Immortal Cells*, INVERSE (May 18, 2017), https://inverse.com/article/31538-henrietta-lacks-immortal-cells-cervical-cancer/ [https://perma.cc/TY4B-NN3Q].

122 *See* Cerone et al., *supra* note 121, at 7893.

123 *See* Ronson, *supra* note 121.

though HeLa was groundbreaking because it was the first immortal cell line found, science has progressed rapidly such that there are innumerable substitutes.[124] Therefore, the cellular contribution of a patient is minimal. The scientist could technically turn to many other sources to obtain the necessary tool.[125] This presumption should be a rebuttable one, however, as there are instances in which the inherent characteristics of the cells or biological material are extraordinary.[126] More likely, though, the cells' innate qualities merely offer a significant shortcut: scientists do not need to genetically engineer the cells to evoke the characteristics they desire, rather the cells do it naturally.[127] In short, cells are widely available experimental tools. It is the scientists and researchers, however, who provide the intellectual impetus, the "something unique."

Take Dr. Gey's contribution to HeLa, for instance. At the time this cell line was discovered, scientists did not know how to keep cells alive outside a human body.[128] HeLa cells can divide forever and are immortal because of Lacks's telomerase mutation, but this is only part of the story. The HeLa cells are able to live forever because they are constantly provided with the necessary nutrients to survive and a

124 *See* CARTER & SHIEH, *supra* note 118, at 299.

125 For a discussion of theoretical substitutes for HeLa, see *id.* at 299–300.

126 *See, e.g.*, Andrew Kimbrell, *The Human Body Shop*, WASH. POST (July 1, 1990), https://washingtonpost.com/archive/opinions/1990/07/01/the-human-body-shop/d4d76633-5954-41c4-945f-895e2f458033/ [https://perma.cc/A9FE-9MZ8] (explaining that "[i]n one remarkable case, hemophiliac Ted Slavin discovered that his blood contained an unusually high concentration of antibodies to the hepatitis B virus").

127 *See* Unique T-Lymphocyte Line & Prods. Derived Therefrom, U.S. Patent No. 4,438,032, at [1]–[2] (filed Jan. 6, 1983) (issued Mar. 20, 1984) ("*As an alternative to genetic engineering*, the ability to culture tumor cells in vitro offers an opportunity for the production of a wide variety of polypeptides. Where the tumor cells do not regulate the production of one or more polypeptides of interest, the tumor cells will constitutively produce these polypeptides. By isolating specific tumor cells and establishing a culture, which can be expanded and maintained for long periods of time, one can directly produce the polypeptides of interest from a 'normal' host cell. *In this manner, one avoids the need to isolate the gene of interest and perform the numerous steps involved with successful genetic engineering.* In addition, where modification of the polypeptide naturally occurs, such as glycosylation, and the modification affects the activity of the polypeptide, it will be observable to employ the native host as the polypeptide source." (emphasis added)).

128 *See* SKLOOT, *supra* note 2, at 35 ("At that point, there were many obstacles to growing cells successfully. For starters, no one knew exactly what nutrients they needed to survive, or how best to supply them. Many researchers, including the Geys, had been trying for years to develop the perfect culture medium—the liquid used for feeding cells."); *see also HeLa Cells (1951)*, *supra* note 102 ("Normally, cancer cells would divide a few times and die off before any decent studies could be done with them. But Henrietta's just kept on dividing and dividing, just so long as they were fed the right mix of nutrients for them to grow. Henrietta's cancer cells became the first human 'cell line' to be established in culture . . . .").

conducive environment to do so.[129] This is what cell culture is: it is "the removal of cells from an animal or plant and their subsequent growth in a favorable artificial environment."[130] The development of this optimal "artificial environment," or culture medium, might be Dr. Gey's crowning contribution to science.[131] Indeed, without Dr. Gey and his team's years of labor and remarkable intellect, Lacks's cells would have died soon after extraction from her body. Never mind their special, immortal capabilities, without Dr. Gey's experimentation and innovation, Lacks's cells would have been a lump of tissue in a petri dish—no different from anyone else's. Thus, while HeLa was literally priceless for its time because it was the first immortal cell line, its uniqueness would never have been realized without Dr. Gey and his Johns Hopkins team. Accordingly, this Note argues, with no intention of diminishing Lacks's contribution, that Dr. Gey's culture medium innovation outweighs her input of raw material. Hence, Dr. Gey was a good-faith converter, who, through his own labor and expense, made it possible for Lacks's cells to thrive under *in vitro* conditions.[132]

The same may be said for Thermo Fisher. Its researchers' innovation with HeLa exceeds the actual value of Lacks's cells. While the Lacks Estate argues that Thermo Fisher's patents would never have been possible without HeLa,[133] we now know this to be hyperbole. Thermo Fisher could have turned to countless other cell lines to create its patented materials.[134] Thus, the profits this biotech company generates from, for example, the Pierce HeLa Protein Digest Standard,[135] one of the patents listed in the Estate's Complaint,[136] is almost entirely derived from Thermo Fisher scientists' innovation. This mammalian protein digest standard, with particular utility in mass spectrometry, is derived from HeLa, but the resemblance stops there. This mammalian protein digest standard, with particular utility in mass spectrometry, is derived from HeLa, but the resemblance stops there. In fact, the HeLa cells used for this patented technology were evidently already altered to meet the Thermo Fisher scientists' needs: "HeLa S3 cells express

129 *See Introduction to Cell Culture*, THERMO FISHER SCI., https://www.thermofisher.com/us/en/home/references/gibco-cell-culture-basics/introduction-to-cell-culture.html [https://perma.cc/84CU-WFF9].

130 *Id.*

131 *See* Ambrose, *supra* note 81; SKLOOT, *supra* note 2, at 39 (Dr. George Gey's "roller-tube culturing technique, [was] his most important invention. It involved a large wooden roller drum, a cylinder with holes for special test tubes called roller tubes.").

132 *See* Ambrose, *supra* note 81, at 467.

133 *See* Civil Complaint & Request for Jury Trial, *supra* note 10, at 11.

134 *See, e.g.*, *Human Cells*, *supra* note 105.

135 *See Pierce HeLa Protein Digest Standard*, THERMO FISHER SCI., https://www.thermofisher.com/order/catalog/product/88328 [https://perma.cc/JPZ5-YKLB].

136 Civil Complaint & Request for Jury Trial, *supra* note 133, at 11–12.

over 15,000 proteins with relevant *post-translational modifications*, making this cell line an ideal standard for complex proteome mass spectrometry applications."[137] The Thermo Fisher scientists then further modified the cells so as to ideally serve consumer researchers in the mass spectrometry process; "[t]he cell lysate has been digested with both LysC and trypsin to minimize tryptic missed cleavages and improve protein sequence coverage."[138]

Thus, it is illogical to conclude that the profits Thermo Fisher generates from this patented technology can be adduced solely to the *substitutable* HeLa cell line. Rather, the profits come from what the scientists *did* with HeLa; from how they manipulated the cells to perform specific, experimental functions.

There is the added issue of cell line contamination, not just in HeLa, but in numerous human cell lines.[139] Specific to HeLa—Lacks's cells have transferred hands several thousands of times and have consequently mutated and changed such that they are beyond recognition:

> The HeLa genome is no longer Henrietta Lacks's personal genome. Although the two share some DNA sequences, the similarity ends there. Lacks's genome had the usual number of 46 normal chromosomes, whereas most HeLa cells have 70–90 chromosomes and more than 20 translocations, some of which are highly complex.[140]

This predicament provides further evidence that today, researchers' intellectual inputs outweigh Lacks's original cellular contribution. Indeed, her original contribution no longer exists—it is tainted almost beyond identification. Consequently, in the case of HeLa, Thermo Fisher is a good-faith converter, and its intellectual property has a higher comparative value than Lacks's cellular contributions to Thermo Fisher's patented technologies.

2. The "Value" of the Original Cellular Contribution

Dr. Gey and Thermo Fisher were good faith converters, and their contributions outweighed that of Lacks's in the creation of HeLa and the related patents. There now only remains the question of damages.

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137 *Pierce HeLa Protein Digest Standard*, *supra* note 135 (emphasis added).

138 *Id.*

139 Douglas A. Kniss & Taryn L. Summerfield, *Discovery of HeLa Cell Contamination in HES Cells: Call for Cell Line Authentication in Reproductive Biology Research*, 21 REPROD. SCIS. 1015, 1015 (2014).

140 Henry H. Heng, Correspondence, *HeLa Genome Versus Donor's Genome*, 501 NATURE 167, 167 (2013).

How should Lacks's original cellular contribution be valued? What is the Lacks Estate owed today?

There are two traditional ways of measuring the value of the unadulterated, original material in an accession.[141] One view, illustrated in *Guffey v. Smith*,[142] holds that the original owner, like Henrietta Lacks, may recover the new value of the property less the labor and expenses of the improver. The alternative method of valuation, propounded in *Gratz v. McKee*,[143] and in *Wetherbee v. Green*, measures the value of the property at the time of the original conversion that gave rise to the accession.

The first method is prone to arbitrary and unjust measure. Assigning a monetary value to a scientist's research or innovation is difficult.[144] Over- or undervaluation might result. The flexibility and variability of that measure is not suitable for the delicate moral and ethical biotechnology context in which we are mired.

Therefore, this Note endorses the latter valuation method: Henrietta Lacks, and other like-situated parties, should be compensated for the initial trespass, or, in other words, for their initial contribution of raw material to the patented technology. Indeed, this second method provides a more uniform, and objective evaluation of contribution. In *Wetherbee v. Green*, the court determined the value of the lumber owed to the original owner, Green, by looking to prevailing market prices for lumber at the time Wetherbee removed it.[145] The same method must be used for human cellular contributions: the monetary value of the patient's cells should be determined by the price of a vial of cells at the time of the patient's particular contribution. By allowing the market to determine the price, the value of the cell line is protected from the whims and discretion of judges.

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141 *See* Hardiman, *supra* note 85, at 255.

142 Guffey v. Smith, 237 U.S. 101, 119 (1915) (holding that correct method to determine value was to deduct the cost of improvements and operations from the value of the oil taken from the owner's land because the improver held a good-faith belief that he owned the property).

143 Gratz v. McKee, 270 F. 713, 721 (8th Cir. 1920) ("[A]s it appears that the trespass was not willful . . . but in a belief of right under a mistaken interpretation of the [law] . . . the recovery should be limited to the actual value at the time of conversion . . . instead of that of the manufactured product . . . ."), *aff'd*, 260 U.S. 127 (1922).

144 *See* C.S. Beals, *The Value of Scientific Research*, 25 J. ROYAL ASTRONOMICAL SOC'Y CAN. 10, 15 (1931) (explaining how the value of scientific research is sometimes hard to quantify: "The experience of the past and the fact that new applications are daily being found for science in industry make it a practical certainty that many present day researches, however far they may appear to be removed from the practical sphere, will in the future find useful applications in daily life.").

145 Wetherbee v. Green, 22 Mich. 311, 316 (1871).

However, an argument against the application of accession to human tissue is that the monetary value of the bodily material is usually very low, if not zero.[146] It is true that after most surgical operations, any remaining excised tissue is typically disposed of as waste product.[147] To be sure, if the value of the original product is zero, there is no utility in applying the *comparative value test* because the later, changed product will always be worth more. The original contributor would not stand a chance.

But, the tissues that scientists select for patentable cell lines are not like most discardable matter. These tissues are specifically selected and retained for their innate characteristics that render them useful for future experimentation. In other words, these patentable tissues are chosen because of their research-apt qualities.[148] Importantly, these traits are often determined while the cells are still within the patient's body and control.[149] For instance, the record indicates that Dr. Golde recognized Moore's unique cellular qualities prior to removing the latter's spleen.[150] Similarly, Dr. Gey spent decades searching for an immortal cell line, sifting through thousands of tissue samples.[151] He did this because he knew there was an immortal human cell line, it was just a matter of who and when.[152] Dr. Gey recognized the utility of a

146 Hardiman, *supra* note 85, at 254.

147 *See id.* at 255; Moore v. Regents of the Univ. of Cal., 793 P.2d 479, 491 (Cal. 1990) (explaining how California statutory law requires the disposal of waste tissue for purposes of maintaining public health and safety).

148 *See* SKLOOT, *supra* note 2, at 30.

149 *See, e.g.*, *Moore*, 793 P.2d at 499 (Broussard, J., concurring and dissenting) ("[T]he majority opinion rests its holding, that a conversion action cannot be maintained, largely on the proposition that a patient generally possesses no right in a body part that has already been removed from his body. Here, however, plaintiff has alleged that defendants interfered with his legal rights before his body part was removed. Although a patient may not retain any legal interest in a body part after its removal when he has properly consented to its removal and use for scientific purposes, it is clear under California law that before a body part is removed it is the patient, rather than his doctor or hospital, who possesses the right to determine the use to which the body part will be put after removal.").

150 *Id.* at 485 (majority opinion) ("Moore alleges that, prior to the surgical removal of his spleen, Golde 'formed the intent and made arrangements to obtain portions of his spleen following its removal from [Moore] in connection with [his] desire to have regular and continuous access to, and possession of, [Moore's] unique and rare Blood and Bodily Substances.' Moore was never informed prior to the splenectomy of Golde's 'prior formed intent' to obtain a portion of his spleen. In our view, *these allegations adequately show that Golde had an undisclosed research interest in Moore's cells at the time he sought Moore's consent to the splenectomy.*" (emphasis added)).

151 SKLOOT, *supra* note 2, at 30, 35.

152 *See id.* at 30 ("[I]n 1943 . . . a group of researchers at the National Institutes of Health had proven [that an immortal cell line] was possible using mouse cells. The Geys wanted to grow the human equivalent—they didn't care what kind of tissue they used, as long as it came from a person.").

human immortal cell line far before HeLa, he was just waiting for it to materialize.

Thus, the "value" of Moore's and Lacks's raw cells, or the amount for which they must be recompensed, should not be valued at zero like most waste-tissue samples. Rather, the value of the original cells, later used for patented cell lines, is determined by their prospective worth in culture. After all, this is why scientists select the tissue samples that they do: for their future efficacy, in culture, as research models. Consequently, the patient's original contribution of cells to each patent should be determined by the prevailing market price of cells in culture. To determine the amount of damages owed to the patient for their contribution of tissue, a court must ask: *how much was a vial of cells in culture at the time of the contribution to the applicable patented technology?*

3. Calculating Market Price: A Variety of Alternatives

Determining the price of a vial of cells, however, is open to interpretation. As of August 28, 2022, on the American Type Culture Collection website alone there were 1,898 human cell line products.[153] Therefore, there is some variation in the price of the cell lines.[154] Hence, there is leeway for the court to elect the best price proxy for any one patient's cellular contribution. The court could decide to average all human cell lines available on the market. Alternatively, the court might choose to use the price of the most commonly used cell line available for sale. HeLa is the most frequently used cell line today,[155] and a vial currently stands at $861.[156]

Alternatively, the court could replicate the valuation method relied upon in *Wetherbee v. Green*. In determining the market value of Green's lumber, the court considered the specific value of the species of trees at issue—the price of pine as opposed to oak, maple, or cherry.[157] Correspondingly, the court here might try to find the prevailing price of the most comparable cell line on the market. For instance, if a patient had contributed tissue from their vertebral spinal column, it would make sense for the court to analyze the market prices for cell lines derived from a like source.[158]

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153 *Human Cells*, *supra* note 105.

154 *Id.* (For example, as of August 28, 2022, the MUG-Chor1 cell line, which is derived from a human vertebral spinal column, is priced at $520 per sample. Compare this with U-CH12, another cell line derived from a human vertebral spinal column, which is priced at $791 per sample).

155 *See* Callaway, *supra* note 114.

156 *Human Cells*, *supra* note 105.

157 Wetherbee v. Green, 22 Mich. 311, 313 (1871).

158 *Human Cells*, *supra* note 105. As an illustrative example, I will again use two commonly used cell lines derived from human vertebral spinal columns: the MUG-Chor1 cell

These market pricing alternatives are especially useful considering that patients might bring claims stemming from time periods where the human cell line market was nascent, like a Henrietta Lacks, or a John Moore. In cases such as those, perhaps averaging all existing cell lines (because there were few), or using the price of the most common cell line available, would provide an approximation of value. For present and future cases, the measure is easier because the cell line market is well defined, and there are many price points to evaluate.

To demonstrate the theory of accession damages owed to the original owner of tissue used in a patented technology, this Note first employs the complicated case of Henrietta Lacks and, second, the far easier case of John Moore.

Lacks's situation is complex because the "trespass" against her is far removed—spatially and temporally—from her numerous patent contributions. Indeed, Lacks has provided original, unadulterated cells to innumerable patented technologies long after her death. Patents using HeLa are the revenue streams to which the Estate of Henrietta Lacks contends it is entitled.[159] In other words, the Lacks Estate is suing for its portion of the patented technologies. Accordingly, Lacks is owed the "value" of her cellular material at each time HeLa was used for each patent technology. This adequately represents the value of her input over the decades. Thermo Fisher has twelve HeLa patents. Therefore, Thermo Fisher must pay twelve iterations of damages. Each patent was undertaken at different times, across decades. Thus, the market prices for each vial of HeLa will be different, and the damages owed for each patent will likely not be identical.

The amount of damages will be determined by the market price for HeLa at the time they were first used in the development of each patented technology. For instance, Thermo Fisher submitted the patent for its Pierce HeLa Protein Digest Standard in 2014.[160] The

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line is priced at $520 per sample, whereas U-CH12, also derived from a human vertebral spinal column, is priced at $791 per sample. *Id.*

159 Civil Complaint & Request for Jury Trial, *supra* note 10, at 13 ("[P]laintiff requests that the Court . . . [o]rder Thermo Fisher Scientific to disgorge the full amount of its net profits obtained by commercializing the HeLa cell line to the Estate of Henrietta Lacks . . . ."); *see also* STEM CELLS: SCIENTIFIC FACTS AND FICTION 381 (Christine Mummery, Anja Van De Stolpe, Bernard A.J. Roelen & Hans Clevers eds., 2d ed. 2014) ("Making stem cell products available to customers, whether for transplantation as therapy to patients or as specific derivatives of stem cells to pharmaceutical companies for drug testing and discovery, usually requires that there is some opportunity for the manufacturer to commercialize the product and make a profit. If there is no opportunity for profit, it is unlikely that the product will be made.").

160 U.S. Patent No. 9,252,003 (filed June 6, 2014) (issued Feb. 2, 2016). Greg Hermanson of Pierce Biotechnology, Inc. submitted the Pierce HeLa Protein Digest Standard in 2014. Pierce Biotechnology is owned by Thermo Fisher. *See Pierce Biotechnology, Inc.*,

research and testing involved in patenting material require a substantial amount of time.[161] For the sake of argument, let us assume that investigations for this specific HeLa patented technology began in 2010. The price of a vial of HeLa in 2010 was $250 dollars.[162] Thus, the Estate of Henrietta Lacks is owed $250 for this particular patent. This analysis should be conducted for each of the remaining eleven patents. The final sum represents the damages owed by Thermo Fisher to the Estate of Henrietta Lacks.

This figure is probably smaller than what the Estate of Henrietta Lacks hoped for. Nevertheless, this measure is an indication of the market price of HeLa, and market price has been alleged to "reflect . . . the value of a good to society."[163] As such, Lacks would receive compensation determined by an objective source, and scientists would be able to continue experimenting with HeLa, undeterred. This is the beauty of accession: "by comparing relative values, the accession principle awards the entitlement to the owner who can best make use of it, which in turn helps maximize social value."[164]

Comparatively, Moore's case is far more straightforward. Both Moore and Lacks endured one discrete "trespass," but, Moore's cells were used in only one patented technology. And, Dr. Golde initiated the patent process rapidly after the trespass to Moore.[165] Thus, Moore's harm and cellular input into the MoT patented technology are intimately and temporally linked. This will likely be the case for most modern patented technologies using human cell lines because scientists today are motivated to patent their research rapidly.[166]

BIONITY.COM, https://www.bionity.com/en/encyclopedia/Pierce_Biotechnology%2C_Inc..html [https://perma.cc/2E59-2V3Q].

161 For instance, it took Dr. Golde eight years to receive a patent for Mo T. *See* Moore v. Regents of the Univ. of Cal., 793 P.2d 479, 481–82 (Cal. 1990).

162 *See 'Immortal' Cells of Henrietta Lacks Live on in Labs*, *supra* note 6. This article was published in 2010 and establishes that "[t]oday . . . a vial of HeLa cells can be purchased online for about $250 a vial." *Id.*

163 N. GREGORY MANKIW, PRINCIPLES OF ECONOMICS 10 (8th ed. 2018).

164 Note, *supra* note 64, at 2389.

165 *See* Unique T-Lymphocyte Line & Prods. Derived Therefrom, U.S. Patent No. 4,438,032, at [22] (filed Jan. 6, 1983) (issued Mar. 20, 1984) (listing Dr. Golde's patent application date as January 6, 1983, which was a mere eight years after Moore's splenectomy).

166 *See R&D, Innovation and Patents*, WORLD INTELL. PROP. ORG., https://www.wipo.int/patent-law/en/developments/research.html [https://perma.cc/G3ZA-RT2A] ("One of the rationales for patents is that they stimulate economic and technological development and promote competition by creating a financial motivation for invention in return for the disclosure of the invention to the public. Although the potential of the patent system has been widely recognized in the context of dynamic innovation activities, some critics have claimed that the current patent system stymies R&D and technological advances.").

For the purpose of this discussion, this Note assumes that accession is applicable to Moore, i.e., that Dr. Golde was a good-faith converter.[167] At base, we must determine the "value" of Moore's cells as set by market price at the time of the original trespass. Moore's spleen, the source from which his cells were taken and subsequently used to generate the Mo T patent, was removed on October 20, 1976.[168] Because the human cell line market was ill-defined and burgeoning at that time, a good proxy would be the price of HeLa, the most commonly used cell line in that period. The price of a sample of HeLa in 1976 was twenty-five dollars.[169] Twenty-five dollars is what is owed to John Moore.

This might be construed as a paltry sum, but it is an objective approximation of his cellular contribution. One must not forget that most people donate their tissue to research for no compensation whatsoever.[170] And, while Moore's cells offered an efficiency benefit because researchers did not have to manipulate cells to overproduce lymphokines, rather Moore's cells did this naturally, scientists had other options with which to generate the same effects.[171] Moore's cells are a tool, and Dr. Golde's manipulation of the cells represents the main source of value attributed to Mo T.

CONCLUSION

James Madison once said that property "embraces every thing to which a man may attach a value and have a right," and that every man "has a property very dear to him in the safety and liberty of his person."[172] Despite the importance in the American tradition of the

167 However, Dr. Golde's "good faith" is the subject of some debate. *See* Moore v. Regents of the Univ. of Cal., 793 P.2d 479, 485–86 (Cal. 1990).

168 *Id.* at 481.

169 Michael Rogers, *The Double-Edged Helix*, ROLLING STONE (Mar. 25, 1976), https://www.rollingstone.com/culture/culture-news/the-double-edged-helix-231322/ [https://perma.cc/QHU9-WTVB]. This article was published in 1976 and explains that

> [t]he Tissue Culture Association has grown, since the Fifties, from less than 100 to 2000 members. The institutional sources of cells now range from NCI-supported facilities like Nelson-Rees's to commercial outfits with toll-free 800 numbers, from whom one can order, for about $25, a tiny glass vial of HeLa cells guaranteed to contain 100 square centimeters of cell surface area.

Id.

170 *See generally Tissue Donation*, DONATE LIFE AM., https://www.donatelife.net/types-of-donation/tissue-donation/ [https://perma.cc/XF4U-CJSC] ("Each year, approximately 58,000 tissue donors provide lifesaving and healing tissue . . . .").

171 *See* Unique T-Lymphocyte Line & Prods. Derived Therefrom, U.S. Patent No. 4,438,032, at [1]–[2] (filed Jan. 6, 1983) (issued Mar. 20, 1984).

172 James Madison, *Property*, NAT'L GAZETTE, Mar. 27, 1792, *reprinted in* 1 THE FOUNDER'S CONSTITUTION (U. Chi. Press ed., 2000).

"liberty of our person," no American court has explicitly recognized a property right in the human body. No court has allowed remedy for human tissues taken without consent. This Note proposes to change this trend.

Nevertheless, our property rights in our bodily tissues must be carefully weighed and considered in tandem with societal welfare. Though the Estate of Henrietta Lacks might be made whole through millions of dollars disgorged from Thermo Fisher, our society generally could be adversely affected. Clinical research and continuing medical innovation are imperative for the longevity of our communities. If the Estate of Henrietta Lacks were to win its pleaded-for-sum, a blow could be dealt to this delicate balance. With windfall gains in this case, more patients might be incentivized to sue. The repercussions for biotech generally could be marked.

But, the ancient doctrine of accession has the potential to remedy this modern clash between biotechnology and the human body. The remedy generated under the theory of accession is normatively sound: the patient is recompensed for their material contribution, while the researcher is unimpeded in their quest for medical advancement. Indeed, equity is served, "[t]he bad faith rule performs an equitable function by reducing the risk of opportunism."[173] So is desert, "[t]he disparity-of-value rule awards ownership to the party that contributes the most value to the final product."[174] Finally, restitution is rightly achieved, "[t]he compensation rule requires that the one who takes title compensate the other for the value of the other's contribution."[175]

Though accession is an old concept, it is startingly suited to this contemporary period of biotechnological innovation. To be sure, accession capably navigates the complexities and realities of cell biology. Immortal cell lines regenerate eternally. Under a theory of accession, however, remuneration is confined to the event from which all harm stemmed: the initial trespass. Accordingly, courts avoid the difficulty, if not impossibility, of wrangling prospective damages in perpetuity. And, the patient's contribution is recognized and compensated for.

But, in order for accession to apply to HeLa and like cases, the state of the law will have to change. American jurisprudence does not recognize property rights in the human body.[176] In order for accession to apply to HeLa, and other human cell lines, courts will have to recognize such a property interest. It would to our society's benefit: with

173 Note, *supra* note 64, at 2385.

174 *Id.*

175 *Id.*

176 *See* Hardiman, *supra* note 85, at 255 ("Neither courts nor legislatures have elaborated law governing property rights in human tissue . . . .").

the increasing importance of human tissue donation,[177] a viable remedy in this context is necessary. The lawsuit levied by the Estate of Henrietta Lacks is not likely to be the last of its kind. And, paying patients for their raw product—their cells—might have the added benefit of incentivizing (nominal) paid donation ex ante, while disincentivizing patients from attempting to reap disproportionate rewards following procedures. Nonetheless, a change in the law is unlikely to happen shortly. Staunch critics of such rights steadfastly remain.[178]

Yet, accession is primed to rise from antiquity to adeptly remedy the harms stemming from the commercialization of human cell lines in the biotechnology industry. Accession uniquely acknowledges the good faith of doctors, their superior input in the development of patented technologies using human cell lines, and looks to prevailing market price to determine damages. Consequently, research is not inhibited, societal faith in medical professionals is retained, and biotech firms are not unduly penalized. Finally, accession would give to Lacks that which no previous court would dare to do, and that which she deserves: restitution and recognition for her unprecedented, immortal cells.

177 *See As Body Donations Increase, So Does the Need for Donors*, MEDCURE (May 29, 2019), https://medcure.org/as-body-donations-increase-so-does-the-need-for-donors/ [https://perma.cc/MDQ4-4XCL] ("[T]he Physicians Committee for Responsible Medicine released a report from its Human Tissue Round Table, which was convened to address the need for human tissue donation. Their conclusions clearly state the preference for fresh, high-quality human tissue samples in all areas of medical research. Emphasis is placed on the need to improve communication between potential body donors and medical professionals in order to increase understanding about the importance of donors and the research they support. This also will help to combat the negative connotations that might still linger around the idea of 'laboratory research' or 'experiments' on human tissue.").

178 *See, e.g.*, Alexandra George, *Property in the Human Body and Its Parts: Reflections on Self-Determination in Liberal Society* 20 (European University Institute, Working Paper LAW No. 2001/8, 2001) ("As statues [sic] have become more sophisticated, a common legislative approach has been to allow living people to make decisions about how their body parts will be treated, although financial incentives that might sway these decisions are generally prohibited. While subject to exceptions . . . people can generally decide to bequeath their body parts for the purposes of transplantation, and next-of-kin can often make equivalent decisions about their deceased relatives. Living people can also make decisions to donate certain non-essential body parts while they are still alive but, as a general rule, no body parts can be legally donated in response to financial incentives. Herein lie some basic inconsistencies that seem to be intertwined with a reluctance to allow too great a commodification of the human body, and this is a reluctance that has commonly translated into an aversion to the legal treatment of the human body as property and a concomitant insistence on examining use of the human body from a 'property' perspective.").