American Journal of Law & Medicine (2024), 50: 3-4, 191–203
doi:10.1017/amj.2025.5

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Law, Medicine & Ethics
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ARTICLE

Skin in the Game: Human Tissue as Property

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Abstract

In 2023, Henrietta Lacks' family won a settlement from Thermo Fisher Scientific on the grounds that the company had been "unjustly enriched" by the sale of products developed with Henrietta's cells. Given that hundreds of thousands of people have tissue stored in the United States, this article explores how today's patients might fare if they similarly sued professionals and companies that undertake unauthorized research on or commercialization of their tissue on the grounds of conversion, unjust enrichment, lack of informed consent, breach of fiduciary duty and, where government entities are involved, Fourteenth Amendment claims. The article notes that the practices that were subsequently seen as unethical in Henrietta Lacks' care continue in some health care institutions today. It also analyzes how research and commercialization without consent can lead to a lack of trust in the research enterprise and the unwillingness of people to participate in research.

Keywords: unjust enrichment; Henrietta Lacks; human tissue; biotechnology; research ethics; informed consent; tissue banks; property rights in the body

In 2021, Henrietta Lacks' family sued Thermo Fisher Scientific, a Fortune 500 company with annual revenues of over $40 billion.[1] The family sued on the grounds that the company had been "unjustly enriched" by the sale of products developed with Henrietta's cells.[2] The parties settled the case for an undisclosed sum in July 2023.[3] The family's lawyers are now seeking compensation from other companies that are marketing Lacks' cells or products based on them.[4]

Given that hundreds of thousands of people have tissue on file in the United States, this essay will explore the legal disputes over body tissue that have occurred over the past forty years and how today's patients might fare if they similarly sued professionals or companies that undertake research on and commercialize their tissue. As a lawyer who has brought pro bono lawsuits involving such disputes,[5]

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[1] Thermo Fisher Scientific Reports Fourth Quarter and Full Year 2023 Results, https://ir.thermofisher.com/investors/news-events/news/news-details/2024/Thermo-Fisher-Scientific-Reports-Fourth-Quarter-and-Full-Year-2023-Results/ (January 31, 2024).

[2] *See* Amended Civil Complaint & Request for Jury Trial at ¶¶ 11, 18, Lacks v. Thermo Fisher Sci., Inc., No. 21-cv-02524 (D. Md. Jan. 26, 2022), 2022 WL 2802235 [hereinafter Lacks Amended Complaint]. at ¶¶ 47–52.

[3] Settlement Order, Lacks v. Thermo Fisher Sci., Inc., No. 21-cv-02524 (D. Md. Aug. 1, 2023) (dismissing the case due to voluntary settlement) [hereinafter Lacks Settlement Order]; *Henrietta Lacks' Family Reaches Settlement over Use of Immortal 'HeLa Cells,'* CBS NEWS (Aug. 1, 2023, 12:35 PM), https://www.cbsnews.com/baltimore/news/henrietta-lacks-family-settlement-lawsuit-hela-cells-thermo-fisher-scientific/ (describing all-day confidential settlement conference occurring on July 31, 2023).

[4] *See* Civil Complaint & Request for Jury Trial at ¶¶ 73–79, Lacks v. Ultragenyx Pharm., Inc., No. 23-cv-02171 (D. Md. Aug. 10, 2023), 2024 WL 2273385 (alleging unjust enrichment from HeLa cell line, case is ongoing).

[5] *See, e.g.*, York v. Jones, 717 F. Supp. 421, 422 (E.D. Va. 1989); Amended Complaint, Greenberg v. Mia. Children's Hosp. Rsch. Inst., Inc., 264 F. Supp. 2d 1064 (S.D. Fla. 2003) (No. 02-22244). I also authored amicus briefs. *See* Brief for Lori Andrews & Marjorie M. Schultz as Amici Curiae Supporting Plaintiff, Moore v. Regents of Univ. of Cal., 793 P.2d 479 (Cal. 1990)

I will highlight some of the individual tissue sources behind these cases, adding their stories and the legal precedents they established to the story of Henrietta Lacks.

I have been involved academically with disputes over body tissue for nearly four decades. In 1986, I published "My Body, My Property" in the Hastings Center Report.[6] Throughout all my work in health law, I have analyzed each new technology, policy, medical practice, or other development for its impact on individuals, relationships, families, communities, social institutions, and legal principles. I undertook interviews with the people most affected,[7] went undercover at times to gather information,[8] and crunched data[9] that my students, colleagues, and I collected about the benefits and risks of each development. From my interaction with colleagues George Annas, Wendy Mariner, and Fran Miller, I know how important it is to ensure that health care and research are undertaken ethically, and that patients' needs and emotions are never left out of the equation. This viewpoint guided my pro bono work as well as my scholarly research.

Henrietta Lacks' Immortal Cells

The Henrietta Lacks saga began in the 1950s, the same decade that Boston University initiated its celebrated health law program.[10] In 1951, Henrietta Lacks, a thirty-one-year-old African-American mother of five children, consulted Dr. Howard Jones at Johns Hopkins Hospital. Dr. Jones took a biopsy of her cervix, sent it to the lab, and diagnosed her with cervical cancer.[11] An experimental operation was undertaken to implant radioactive rods in her cervix to treat the cancer.[12] At the same time, Dr. Lawrence Wharton Jr., at the behest of a colleague and without Henrietta's knowledge or consent, removed two pieces of cervical tissue in a procedure unrelated to her medical treatment.[13]

The colleague, Dr. George Gey, had tried unsuccessfully for years to cultivate a cell line that would continue to reproduce indefinitely.[14] Cell lines typically die after a certain number of replications.[15] An immortal cell line was a Holy Grail, sought in order to enable cancer experiments and to foster research that could then be replicated by other scientists on an identical cell line.[16]

Henrietta Lacks' cells were unique and, as it turned out, extremely valuable.[17] They replicated indefinitely. HeLa cells, as they were called, were the first human cells to survive and thrive outside the body in a test tube.[18]

[hereinafter Andrews & Schultz]; Brief for Am. Med. Ass'n et al. as Amici Curiae Supporting Petitioners, Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576 (2013) (No. 12-398). I also provided advice in *Wash. Univ. v. Catalona*, 490 F.3d 667 (8th Cir. 2007).

[6] Lori B. Andrews, *My Body, My Property*, HASTINGS CTR. REP. Oct. 1986, at 28. I went on to publish over 40 more articles and a book that dealt with these issues, LORI ANDREWS & DOROTHY NELKIN, BODY BAZAAR: THE MARKET FOR HUMAN TISSUE IN THE BIOTECHNOLOGY AGE (2001).

[7] *See* LORI ANDREWS, BETWEEN STRANGERS: SURROGATE MOTHERS, EXPECTANT FATHERS, AND BRAVE NEW BABIES viii (1989); Lori B. Andrews, Beyond Doctrinal Boundaries: A Legal Framework for Surrogate Motherhood, **81** Va. L. Rev. 2343, 2349–50 (1995).

[8] Lori B. Andrews, *Inside the Genius Farm*, PARENTS MAG., Oct. 1980, at 82; LORI B. ANDREWS, THE CLONE AGE: ADVENTURES IN THE NEW WORLD OF REPRODUCTIVE TECHNOLOGY 126 (1999).

[9] *See, e.g.*, Sarah R. Blenner et al., *Privacy Policies of Android Diabetes Apps and Sharing of Health Information*, 315 JAMA 1051 (2016); Lori Andrews, *A New Privacy Paradigm in the Age of Apps*, 53 WAKE FOREST L. REV. 421 (2018); Lori B. Andrews et al., *An Alternative Strategy for Studying Adverse Events in Medical Care*, 349 LANCET 309 (1997); Lori Andrews, *Studying Medical Error in SITU: Implications for Malpractice Law and Policy*, 54 DEPAUL L. REV. 357 (2005).

[10] *See generally* William J. Curran, *The Boston University Law-Medicine Research Institute: Doctor and Lawyer Get Together*, BOS. MED. Q., Dec. 1958, at 117.

[11] REBECCA SKLOOT, THE IMMORTAL LIFE OF HENRIETTA LACKS 16–17, 31–32 (2010).

[12] *Id.* at 33.

[13] *Id.*

[14] *Id.* at 30.

[15] *Id.*

[16] *See id.* at 30, 58.

[17] *See infra* note 23.

[18] SKLOOT, *supra* note 11, at 40–41.

Henrietta's cells have formed the basis for much of the scientific enterprise across the world in the decades since her death. Virtually every high school biology student, every medical student, and every vaccine maker has manipulated her cells.[19] The Lacks family website notes that "[o]ver 50,000,000 metric tons of HeLa cells have been distributed around the world to become the subject of more than 75,000 studies."[20] The cells formed the basis for the development of the polio vaccine, and for research on cancer, Covid, HIV/AIDS, Parkinson's disease, as well as many other conditions.[21] They were even sent to space during the Space Race to uncover the impact of zero gravity on human cells.[22]

Henrietta's cells and the products made from them are sold and worth billions.[23] In an interview in 1994 with medical historian and ethicist Harriet Washington four decades after Henrietta's death, her husband said, "As far as them selling my wife's cells without my knowledge and making a profit — I don't like that at all. They are exploiting both of us."[24] While fortunes have been made on the foundation of the HeLa cells, Henrietta's own children lacked access to education and basic health care.[25]

In 2013, the Lacks family stumbled upon further troubling news. Researchers in Germany had sequenced Henrietta Lacks' genome, compared it to the genomes of healthy cell lines, and made her genetic profile publicly available.[26] The family members were concerned about the invasion of their own privacy, because Henrietta's genome might reveal their own disease risk.[27] Her grandson said, "It's like, 'Here we go again, being involved in research without our permission or our consent.'"[28]

When the family complained, the German researchers removed Henrietta's genome from public view.[29] The incident raised sufficient concern that, in 2013, the National Institutes of Health and the Lacks family entered into the HeLa Genome Data Use Agreement, which provided for advance scrutiny of NIH-funded research that would use genetic data from the HeLa cells.[30]

The 2021 case of Henrietta Lacks might seem unique — a perfect storm where the appalling history of medical apartheid and the total absence of consent to the mining of her cells came to court in a post-George Floyd era where there had already been widespread coverage, through a best-selling book[31] and a

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[19] *See generally Henrietta Lacks: Science Must Right a Historical Wrong*, Nature, Sept. 3, 2020, at 7, 7 (2020) (discussing Lacks' granddaughter's experience experimenting with HeLa cells in high school and the prominence of the cells' use in the medical field).

[20] *Her Story*, Lacks Fam., https://lacksfamily.com/her-story [https://perma.cc/M7XW-NQY9] (last visited June 29, 2024); *see also* Skloot, *supra* note 11, at 2.

[21] *Her Story*, *supra* note 20.

[22] *See* Takeo Ohnishi et al., *Detection of DNA Damage Induced by Space Radiation in Mir and Space Shuttle*, 43 J. Radiation Rsch. S133, S133–34 (2002).

[23] *See Her Story*, *supra* note 20 (reporting over 50 million metric tons of the cells have been distributed); *Product Information for CRM-CCL-2 HeLa Cells*, Am. Type Culture Collection, https://www.atcc.org/products/crm-ccl-2 [https://perma.cc/HXB9-GYY7] (last visited Oct. 1, 2024) (listing the price of one order of cells as $931).

[24] Harriet A. Washington, *Human Guinea Pigs*, Emerge, Oct. 1994, at 24, 29.

[25] *Henrietta Lacks: The Mother of Modern Medicine*, Franklin Cnty. Pub. Health (Feb. 16, 2022), https://myfcph.org/henrietta-lacks-the-mother-of-modern-medicine/ [https://perma.cc/GZ45-XED7].

[26] *See* Jonathan J.M. Landry et al., *The Genomic and Transcriptomic Landscape of a HeLa Cell Line*, 3 G3 1213, 1213–24 (2013).

[27] *Lacks Family Reach Understanding to Share Genomic Data of HeLa Cells*, Nat'l Insts. of Health (Aug. 7, 2013), https://www.nih.gov/news-events/news-releases/nih-lacks-family-reach-understanding-share-genomic-data-hela-cells [https://perma.cc/U5FL-AMKT].

[28] John Arnst, *Sharing the Whole HeLa Genome*, Am. Soc'y for Biochem. & Molec. Biology (Feb. 1, 2017), https://www.asbmb.org/asbmb-today/science/020117/sharing-the-whole-hela-genome [https://perma.cc/8EPN-P7JM].

[29] Nat'l Insts. of Health, *supra* note 27.

[30] *See Summary of the NIH HeLa Genome Data Use Agreement*, Nat'l Insts. of Health (Aug. 7, 2013), https://www.nih.gov/sites/default/files/institutes/foia/summary-data-use.pdf [https://perma.cc/NE5E-DDYE]; *see also The NIH-Lacks Family Agreement*, Nat'l Insts. of Health Sci. Data Sharing, https://sharing.nih.gov/data-management-and-sharing-policy/protecting-participant-privacy-when-sharing-scientific-data/the-nih-lacks-family-agreement [https://perma.cc/FG6W-38C6] (last visited Oct. 1, 2024).

[31] *See generally* Skloot, *supra* note 11.

film starring Oprah,[32] of the harms to the Lacks family. But what about the hundreds of thousands of other individuals who have tissue on file in the United States? Might they also have legal claims when their tissue is used in ways that violate their personal wishes or religious beliefs?

The Widespread Use of Human Tissue Today

An astonishing amount of human tissue has been collected over the years as the potential uses for it have broadened. Over two decades ago, in 1999, the National Bioethics Advisory Commission estimated that more than 282 million archived and identifiable pathological specimens from more than 176 million individuals were stored in U.S. repositories.[33] Between public health screening, research studies, routine medical tests, and autopsies, virtually everyone has his or her tissue "on file." If you were born in the United States since the early 1970s, a blood sample was taken at birth for newborn genetic screening, a public health program.[34] Some states save those samples indefinitely.[35]

Even barbers and janitors have people's DNA—and some try to exploit it. Astronaut Neil Armstrong's barber sold his hair clippings to a collector, causing Armstrong to threaten suit.[36] Michael Jackson's hair caught fire during a Pepsi commercial and charred pieces turned up on the biocollectibles market years later.[37]

When Henrietta Lacks underwent surgery in 1951, uses for human tissue were limited to diagnosis and, in some cases, research.[38] That changed dramatically in subsequent decades. The 1960s brought successful organ transplants from cadavers,[39] and the 1980s biotech boom saw the commercialization of human tissue to create biotech products.[40] Expanding markets have increased the value of human tissue, and institutions — such as hospitals, research laboratories, museums, and the state and federal repositories that store tissue samples — find they possess a capital resource. As I wrote in 2005, "[a] single cadaver can be mined for medical and research uses — its skin worth $36,522, its bones

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[32] Salamishah Tillet, *Oprah Winfrey on 'The Immortal Life of Henrietta Lacks,'* N.Y. Times (Apr. 12, 2017), https://www.nytimes.com/2017/04/12/arts/television/oprah-winfrey-on-the-the-immortal-life-of-henrietta-lacks.html [https://perma.cc/Y4KC-UDPK].

[33] 1 Nat'l Bioethics Advisory Comm'n, Research Involving Human Biological Materials: Ethical Issues and Policy Guidance 1, 14 (1999). This number has likely only grown in the intervening years. The Secretary's Advisory Committee on Human Research Protections (SACHRP), Attachment D: FAQ's Terms and Recommendations on Informed Consent and Research Use of Biospecimins, U.S.

Dep't Of Health & Human Servs., https://www.hhs.gov/ohrp/sachrp-committee/recommendations/2011-october-13-letter-attachment-d/index.html [https://perma.cc/2VHL-3P88] (last updated Oct. 13, 2011) ("While there is no accurate catalog of the number or locations of specimens, there are reasonable estimates that billions of specimens are now stored in laboratories, repositories and 'tissue banks' across the country[.]").

[34] Diane B. Paul & Jeffrey P. Brosco, The PKU Paradox: A Short History of a Genetic Disease 54–71 (2013); *see also* Legal Liability and Quality Assurance in Newborn Screening (Lori B. Andrews ed., 1985).

[35] *See, e.g.*, Minn. Stat § 144.125 (2023) (establishing that the Department of Health may store the infant's blood samples and test results, but that the parents can elect to have the samples discarded at any time); Cal. Code Regs. tit. 17, § 6505(f) (2024) (establishing that collected samples become property of California and can be used for de-identified research approved by the Department of Health and Human Services); *see* Michelle H. Lewis et al., *State Laws Regarding the Retention and Use of Residual Newborn Screening Blood Samples*, 127 Pediatrics 703, 706 & tbl. 1 (2011) (surveying the status of state newborn screening laws regarding retention and residual use).

[36] *Astronaut's Hair Sparks Legal Hubbub*, NBC News (June 1, 2005, 3:12 PM), https://www.nbcnews.com/id/wbna8062442 [https://perma.cc/626X-KJC4].

[37] Steven Morris, *Hair of the Gods: Locks from Elvis and Michael Jackson to Go on Sale*, Guardian (Oct. 13, 2009, 6:38 AM), https://www.theguardian.com/music/2009/oct/13/michael-jackson-hair-auction-pepsi [https://perma.cc/DKY7-VFD6].

[38] *See* Andrews & Nelkin, *supra* note 6, at 6–7.

[39] *Donation & Transplantation History*, Health Res. & Servs. Admin., https://www.organdonor.gov/learn/history [https://perma.cc/3CAB-DWZJ] (last visited Oct. 11, 2024).

[40] The modern age of biotechnology dates back to 1980 with the first IPO of a biotech company. *See* Jonathan Smith, *Humble Beginnings: The Origin Story of Modern Biotechnology*, Labiotech (June 24, 2022), https://www.labiotech.eu/in-depth/history-biotechnology-genentech/ [https://perma.cc/N7AJ-6NV9].

$80,000, its tendons $21,400, and so forth."[41] The value of a particularly interesting human gene can be over a billion dollars.[42] Conflicts can arise when tissue is used for research or commercialization in ways that have not been disclosed to the tissue source.

Human Tissue Cases in the Courts

John Moore was one of the first targets of the emerging biotech industry's quest for tissue.[43] A Seattle resident, John Moore sought treatment for his hairy cell leukemia at UCLA. Although his treatment was completed in 1976, his physician led him to believe he was still ill and kept asking him fly back to Los Angeles to provide tissue, including sperm, bone marrow, and blood.[44] When he told his doctor that he could no longer afford the trips, his doctor offered to fly him to Los Angeles and put him up at a Beverly Hills hotel.[45]

That offer tipped Moore off that something strange was going on. That something strange: His doctor had patented Moore's cell line and was negotiating with biotech companies for access to Moore's tissue. When he learned that his doctor was commercializing his cell line, Moore felt "violated for dollars," "invaded," and "raped."[46]

Moore brought suit, alleging (1) conversion; (2) lack of informed consent; (3) breach of fiduciary duty; (4) fraud and deceit; (5) unjust enrichment; (6) quasi-contract; (7) bad faith breach of the implied covenant of good faith and fair dealing; (8) intentional infliction of emotional distress; (9) negligent misrepresentation; (10) intentional interference with prospective advantageous economic relationships; and (11) slander of title.[47]

The trial court dismissed the case, but the California Court of Appeals analogized the situation to cases involving celebrities such as Bela Lugosi (who played Dracula), who had been held to have a legally-recognized interest in his own likeness which prevented other people from marketing photos of him.[48] The court wrote, "If the courts have found a sufficient proprietary interest in one's persona, how could one not have a right in one's own genetic material, something far more profoundly the essence of one's human uniqueness than a name or a face?"[49]

The court also pointed out that the Uniform Anatomical Gift Act gives patients control over what is done with their tissue after they die,[50] so it seems logical that they should have control before they die. On a practical note, the court wrote, "If this science has become science for profit, then we fail to see any justification for excluding the patient from participation in those profits."[51]

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[41] Lori Andrews, *Harnessing the Benefits of Biobanks*, 33 J.L. MED. & ETHICS 22, 22 (2005); *see also* Storm Theunissen, *How Much Is a Body Worth? I Set Out to Find Out*, GUARDIAN (Aug. 13, 2012, 8:29 AM), https://www.theguardian.com/commentisfree/2012/aug/13/body-worth-more-dead-alive ("In America, once a cadaver has been disarticulated into about 60 different tissues, the body parts are processed and made into medical products, which together are worth up to $250,000 on the open market.").

[42] *See* S.M. Thomas et al., *Ownership of the Human Genome*, 380 NATURE 387, 388 (1996) ("[I]nclusion of DNA sequence information in patent claims was essential to secure intellectual property rights to erythropoietin, currently biotechnology's highest earning drug at $1.5 billion a year.").

[43] Moore v. Regents of Univ. of Cal., 793 P.2d 479, 481–82 (Cal. 1990).

[44] *See id.* at 481.

[45] Interviews by Lori Andrews with John Moore.

[46] ANDREWS & NELKIN, *supra* note 6, at 28; HARRIET A. WASHINGTON, DEADLY MONOPOLIES 11 (2011) (quoting John Moore as saying: "How does it feel to be patented? There was a sense of betrayal. I mean, they owned a part of me that I could never recover. I certainly have no objection to scientific research … but it was like a rape. In a sense, you've been violated, for dollars. My genetic essence is held captive."). The author of this article (Lori Andrews) also interviewed John Moore and his family members in person.

[47] Moore v. Regents of Univ. of Cal., 249 Cal. Rptr. 494, 498-99 (Cal. Ct. App. 1988), *aff'd in part, rev'd in part* 793 P.2d 479 (Cal. 1990).

[48] Lugosi v. Universal Pictures, 603 P.2d 425, 431 (Cal. 1979) (acknowledging Lugosi's right with the qualification that it was personal to Lugosi and did not survive him).

[49] *Moore*, 249 Cal. Rptr. at 508.

[50] *See id.* at 506.

[51] *Id.* at 509.

On appeal, though, the California Supreme Court refused to recognize Moore's property right.[52] Marjorie Shultz, a Berkeley law professor, and I argued in an amicus brief that Moore had a valid cause of action for lack of informed consent and for breach of fiduciary duty — the physician's responsibility to put the patient's interest first.[53]

The court agreed, holding that a physician must tell his patient if he has a personal interest unrelated to the patient's health, whether research-related or economic, that might affect his judgment.[54] As a result, the American Medical Association's Ethics Code § 7.3.9 now states that potential commercial applications must be disclosed to the patient.[55] And that physician "should… [s]hare profits from the commercial use of human biological materials with the tissue donor in accordance with lawful contractual agreements."[56]

The rationale of the *Moore* court's duty to inform was that "[a] physician who adds his own research interest to this balance may be tempted to order a scientifically useful procedure or test that offers marginal, or no, benefits to the patient."[57] This certainly seemed to be what happened to Moore, who was repeatedly called back to his doctor's office to give blood, bone marrow, sperm, and other tissue.[58]

Even though Moore had been wronged, the California Supreme Court declined to recognize Moore's property rights in his tissue, in large measure because the justices did not want to hamper the fledgling biotechnology industry.[59] The majority stated, "The extension of conversion law into this area will hinder research by restricting access to the necessary raw materials."[60]

But failing to give Moore a property right in his tissue has led, as in Henrietta Lacks' case, to the continued, problematic commercialization of peoples' tissue. John Moore himself is still one of the many individuals whose cell lines you can order by perusing the catalogue of the American Type Culture Collection (ATCC).[61] John Moore's cells are for sale as CRL-8066.[62] The entry about Moore's cells on the ATCC website urges people to "Buy Now," at a price of $708 per order, saying the cells have a rating of 99/100 Bioz Stars and are recommended for use in studies of "3D cell culture, Immune system disorder research, and Immunology."[63] According to the entry, they have been referenced in 41 product citations and served as the basis for a 2022 patent, U.S. Patent No. 11,391,726, covering "MoT cells as a therapeutic screening tool for regulatory t-cell activity."[64]

The ATCC houses thousands of individuals' cell lines in an over 100,000 square foot building in Manassas, Virginia — you can even buy HeLa cells — but it is doubtful that more than a handful of those individuals or their families realize that they are part of this elite market.[65]

Unjust Enrichment Claims Enter the Debate

The *Moore* court's refusal to rule that a person has a property interest in their tissue set the stage for other doctors and researchers to harvest their patients' tissue. Dan Greenberg was the father of two children

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[52] Moore v. Regents of Univ. of Cal., 793 P.2d 479, 487–89 (Cal. 1990).

[53] *See* Andrews & Schultz, *supra* note 5.

[54] *Moore*, 793 P.2d at 485.

[55] Code of Med. Ethics § 7.3.9(a) (Am. Med. Ass'n 2016).

[56] *Id.* § 7.3.9(c).

[57] *Moore*, 793 P.2d at 484.

[58] *Id.* at 481.

[59] *See id.* at 494–95.

[60] *Id.* at 494.

[61] Am. Type Culture Collection, http://www.atcc.org [https://perma.cc/SQ44-M4QC] (last visited Sept. 25, 2024).

[62] *Product Information for Mo [Mo T] Cell-Line – CRL-8066*, Am. Type Culture Collection, https://www.atcc.org/products/crl-8066 [https://perma.cc/3H3S-6ZUP] (last visited Sept. 25, 2024).

[63] *Id.*

[64] *Id.*; U.S. Patent No. 11,391,726 (issued July 19, 2022).

[65] *ATCC Celebrates Building Expansion with Groundbreaking Ceremony*, Am.Type Culture Collection (Nov. 7, 2019), https://www.atcc.org/about-us/newsroom/2019-news-releases/atcc-celebrates-building-expansion-with-groundbreaking-ceremony. That certainly sounds like cells are property — just not the individual's property!

who suffered from Canavan disease. While Dan's children were seemingly healthy at first, they failed to reach milestones such as raising their heads or crawling. Then came seizures and pain. With Canavan disease, children do not develop beyond the infant stage, even though they will live to age ten or older.

In 1987, Dan Greenberg contacted a geneticist to persuade him to search for the Canavan gene. He chose that particular doctor because the doctor had been active in screening for Tay-Sachs disease, a condition for which free genetic testing was undertaken in schools and synagogues, as well as in doctors' offices, to alert Ashkenazi Jewish individuals to their risk of having a child with that disorder.

For over a decade, Dan's family and other Ashkenazi Jewish families of children with Canavan disease, as well as non-profit foundations, provided tissue and money to the geneticist so that he could sequence the genetic mutation that caused this devastating neurological disease. They intended that the genetic sequence be used to develop a diagnostic test, so that couples could be tested to see if they were carriers of the disorder and prenatal testing could be done to see if a fetus was affected with the disorder.

For over a dozen years, Dan worked to make sure the research succeeded. He identified Canavan families from around the world, constructed their family trees, and convinced them to donate tissue from their children (including brain tissue when the children died, which in some cases conflicted with their religious beliefs). He also raised money for whatever equipment and services the doctor needed.

When the doctor identified the section of Dan's and his son's gene sequence that was correlated with Canavan disease, though, the doctor and his hospital patented that series of As, Ts, Cs, and Gs without Dan's knowledge or consent. And when the families and non-profit foundations convinced medical providers to offer Canavan gene testing for free, the patent holders forced the free testing program to close. The families and foundations asked me if I would bring suit on their behalf.

I agreed to help and convinced a large law firm to join my pro bono efforts on Greenberg's behalf. Then, shortly before the statute of limitations was to run, the law firm dropped out. It did not want to take the risk of scaring away biotech clients.

At the time, I was a law professor who did not even have a fax machine with a date stamp. I did not have the legions of big law firm associates that opposing counsel in the case had. The families and foundations had used their money to support the doctor's work and had little money available for experts or other litigation-related costs. But I did have colleagues in the Law Offices of Chicago-Kent College of Law (Ed Kraus and Laurie Leader) who were willing to help. The law school dean, Hal Krent, and I offered a seminar for honors students to, in short order, draft a complaint for the case.

We asserted causes of action for conversion (to try to undo the faulty, in my opinion, *Moore* holding), lack of informed consent, breach of fiduciary duty, theft of trade secrets (the vast materials and international family tree that Dan had put together), and unjust enrichment.[66] We filed suit in federal court in Chicago, because the doctor had worked at the University of Illinois, Chicago and the Greenbergs lived in the Chicago area.

We were devastated when the federal court moved the case to Florida, where the doctor was now living.[67] But, seemingly unbeknownst to the defendant's lawyers, a statute had been enacted in Florida that gave us a ray of hope. Florida Statute § 760.40(2)(a) said that the results of a genetic test were the "exclusive property" of the person tested.[68] We could argue that the mutation that Dr. Matalon patented was Dan Greenberg's property.

Judge Moreno, federal district court for the Southern District of Florida, enmeshed us in a Catch-22 situation. He said that there had not been a previous case where the statute had been applied in a situation such as the Greenberg's.[69] But the statute was so new at that point, there had not yet been a chance to apply it.

Relying on the *Moore* case, Judge Moreno held that the plaintiffs had no property right to the tissue.[70] However, the court ruled they could maintain a cause of action for *unjust enrichment* since "the facts

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[66] Greenberg v. Mia. Children's Hosp. Rsch. Inst., Inc., 208 F. Supp. 2d 918, 921–22 (N.D. Ill. 2002).

[67] *See id.* at 928–29; Greenberg v. Mia. Children's Hosp. Rsch. Inst., Inc., 264 F. Supp. 2d 1064, 1068 (S.D. Fla. 2003).

[68] Fla. Stat. § 760.40(2)(a) (2021), *amended by* 2021 Fla. Laws ch. 216 (effective Oct. 1, 2021).

[69] *See Greenberg*, 264 F. Supp. 2d at 1075.

[70] *See id.* at 1074.

paint a picture of a continuing research collaboration that involved Plaintiffs also investing time and significant resources in the race to isolate the Canavan gene."[71]

This decision led to an out-of-court settlement. Dan Greenberg and the other plaintiffs had not wanted money from the lawsuit, but access to the gene sequence for researchers and access to testing for people who, because of patent royalties, could not afford it. Decades later, unjust enrichment was used successfully on behalf of the Lacks family to receive a settlement with Thermo Fisher.[72]

Can Reproductive Tissue be Property?

Both John Moore and Dan Greenberg were denied property rights in their tissue, but it seemed to me that such an approach would lead to abuses by doctors and researchers who viewed their patients as gold mines. Plus, as I had argued as far back as my 1986 article, legal protections were needed for people who stored their tissue (such as an embryo for in vitro fertilization or their blood before an operation to avoid transfusion-related HIV) and expected to get it back or have a say in its future uses.[73] Even in *Moore*, the court stated that "we do not purport to hold that excised cells can never be property for any purposes whatsoever[.]"[74]

Soon after "My Body, My Property" was published, I was approached by a couple for another pro bono case.[75] Risa York had been trying to conceive a child for the previous four years. She and her husband Steven sought care at what was, at the time, the only in vitro fertilization clinic in the country. The clinic was run by Howard Jones — one of the doctors involved in the Henrietta Lacks case.[76] Risa's eggs were fertilized in a petri dish with her husband Steven's sperm. On their fourth unsuccessful attempt at in vitro fertilization, they were offered the opportunity to have one of their embryos frozen for later use.

Before freezing the embryo, the Yorks were asked to sign a consent form. It said that the Yorks had "the principle [sic] responsibility to decide the disposition" of their embryo.[77] And it said that, if they no longer wished to seek a pregnancy, they had three choices—terminate the embryo, donate the embryo to another couple, or allow research on the embryo.[78]

During the course of their treatment, the Yorks moved to Los Angeles and decided to change clinics to obtain in vitro fertilization from Dr. Richard Marrs there. Marrs had achieved the United States' first birth from a frozen embryo.[79]

Steven and Risa researched how to safely move the embryo from the East Coast to the West Coast. They learned that it could be transported — like other human tissue or organs — in a liquid nitrogen tank known as a biological dry shipper. Steve was a physician who had transported human tissue, such as corneas, while a medical resident, so he felt completely comfortable about picking up the embryo and flying it back in the biological dry shipper in the seat alongside him in the airplane.

But Dr. Howard Jones would not allow it.[80] He said Risa was limited to the three choices in the form. Risa was devastated that he would not allow her to move the embryo to achieve a pregnancy, but was willing to throw it out, do research on it, or donate it to another woman.

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[71] *Id.* at 1072–73.

[72] *See* Lacks Amended Complaint, *supra* note 2, at ¶¶ 47–52; Lacks Settlement Order, *supra* note 3, at 1.

[73] Andrews, *supra* note 6, at 29, 33.

[74] Moore v. Regents of Univ. of Cal., 793 P.2d 479, 493 (Cal. 1990).

[75] *See* York v. Jones, 717 F. Supp. 421, 422 (E.D. Va. 1989).

[76] *See* Skloot, *supra* note 11, at 31–32.

[77] *York*, 717 F. Supp. at 424.

[78] *Id.*

[79] *1st U.S. Frozen Embryo Baby Born in L.A.*, L.A. Times (June 5, 1986), https://www.latimes.com/archives/la-xpm-1986-06-05-me-9460-story.html [https://perma.cc/W7YE-9KFC].

[80] *York*, 717 F. Supp. at 424.

There had been one previous case in which a couple (the Del Zios) argued that their embryo was property. In that case, a doctor at Columbia Presbyterian attempted to perform in vitro fertilization in 1973, but his department chair removed the embryo from the laboratory, thus thwarting the couple's attempt to be parents, because of his opposition to the procedure.[81] The couple sued, but the jury rejected the property claim[82] and instead granted Mrs. Del Zio $50,000 for emotional distress and Mr. Del Zio $3.00 in nominal damages (substantially less than he would have received if he had sold the sperm to a sperm bank).[83]

My co-counsel in the York case, Virginia lawyer Jerry Denton, tried to persuade me to give Yorks' embryo a name in our legal documents, giving the impression that refusal to release the embryo was akin to kidnapping. But I protested: "Turning the embryo into a person with legal rights of its own would set a dangerous precedent. Women's abortion rights would be in jeopardy — abortion would be murder. Other areas of law would be turned topsy-turvy."[84] We chose instead to assert claims based on property law, contract law, and constitutional law.

Months after denying our motion for summary judgment, the court finally ruled that the Yorks had a valid cause of action under property law.[85] Their act of depositing their embryo at the clinic created a bailment, ruled the judge, just like dropping one's car off at a parking garage would.[86] The court also held that the informed consent form gave them contract rights to control the disposition of the embryo.[87] Three months later, the clinic finally agreed to give the embryo back. We proceeded to the airport and the Yorks put the three-foot cylindrical dry shipper holding the embryo into the window seat, put a pillow around it, and clicked its seatbelt.

Property Disputes Over Tissue Take Many Forms

In the years since the decision in the *York* case, other courts have recognized property rights in human tissue. In some instances, a state entity has directly or implicitly authorized the removal of tissue from a deceased individual without the explicit consent of relatives,[88] or a statute or ordinance has condoned the removal.[89] In cases where the tissue has been removed pursuant to such a governmental policy, family

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[81] Del Zio v. Presbyterian Hosp., No. 74 Civ. 3588, 1978 U.S. Dist. LEXIS 14450, at *1–2 (S.D.N.Y. Nov. 9, 1978); *see also* Marilyn Church, *Test Tube Baby* (illustration), *in Drawing Justice: Significant and Landmark Cases*, Libr. of Cong., https://www.loc.gov/exhibitions/drawing-justice-courtroom-illustrations/about-this-exhibition/significant-and-landmark-cases/frozen-embryos-as-personal-property/ [https://perma.cc/T7TS-EFQG] (last visited Oct. 15, 2024) (sketch of court scene from *Del Zio*).

[82] *See* Tabitha M. Powledge, *A Report from the Del Zio Trial*, Hastings Ctr. Rep., Oct. 1978, at 15, 15–17.

[83] *Del Zio*, 1978 U.S. Dist. LEXIS 14450, at *11 (detailing the jury verdict); *id.* at *24–25 (holding that the jury verdict was "fair, reasonable, and lawful").

[84] Lori B. Andrews, *Birth of a Motion*, Student Law., Apr. 1990, at 25, 27. The dangers I'd warned about over 30 years ago, regarding claiming personhood in an embryo case came to pass in the 2024 IVF case after a couple used a wrongful death cause of action in a case involving the destruction of their embryo. The parents sued under the Wrongful Death of Minor Act, Ala. Code § 6-5-391 (1975); *see also* LePage v. Ctr. for Reprod. Med., P.C., No. SC-2022-0515, -0579, 2024 WL 656591, at *1 (Ala. Feb. 16, 2024). The issue of property was not raised in the Alabama Supreme Court case. *See id.* at *2 (noting that plaintiffs pleaded common-law claims "only in the alternative" and "only … should the Courts of [Alabama] or the United States Supreme Court ultimately rule that [an extrauterine embryo] is not a minor child, but is instead property"). The court's ruling recognizing the embryo as a person has sparked concern among legal scholars over its potential impact on the legality of IVF in Alabama. *See, e.g.*, Joshua Sharfstein, *The Alabama Supreme Court's Ruling on Frozen Embryos*, Johns Hopkins Bloomberg Sch. of Pub. Health (Feb. 27, 2024), https://publichealth.jhu.edu/2024/the-alabama-supreme-courts-ruling-on-frozen-embryos [https://perma.cc/3Z37-WUT2].

[85] *See York*, 717 F. Supp. at 426–27.

[86] *Id.* at 425.

[87] *Id.* at 426–27.

[88] Whaley v. County of Tuscola, 58 F.3d 1111, 1114–16 (6th Cir. 1995).

[89] *See* Newman v. Sathyavaglswaran, 287 F.3d 786, 798 (9th Cir. 2002); *see also* Cal. Gov't Code § 27491.47(a)(2) ("Notwithstanding any other law, the coroner may, in the course of an autopsy, authorize the removal and release of corneal eye tissue from a body within the coroner's custody, if … [t]he coroner has no knowledge of objection to the removal … .").

members of the deceased have an additional legal weapon: the Fourteenth Amendment, which prohibits states from depriving a person of life, liberty, or property without due process of law.[90]

At Saginaw Community Hospital in Michigan, Armando Herrera was an assistant to the pathologist who conducted autopsies.[91] Herrera's job was to open up the bodies and then, after the pathologist had finished work, sew them back up.[92] But Herrera had another job: he owned and operated the Central Michigan Eye Bank and Tissue Center.[93] So when the autopsies were over, and without informing the next of kin, he would remove the deceased's eyes and sell them.[94]

Relatives of Herrera's deceased victims claimed Fourteenth Amendment violations on the grounds that state entities, namely the counties of Saginaw and Tuscola, had been paid by Herrera for access to the eyes,[95] but the trial court dismissed their claims on the grounds that a relative's interest in a next of kin's body was not a "property interest" under the Fourteenth Amendment's Due Process Clause.[96] The Sixth Circuit Court of Appeals, however, was clearly troubled that people might not be protected if their next of kin's bodies could not be considered property. If a woman's husband died in a neighbor's yard, one judge asked, should the neighbor simply be able to keep the body?[97] To the appellate court, the answer was clear. The court ruled unanimously that next of kin have "a constitutionally protected property interest in the dead body of a relative."[98]

In some body-as-property cases, the patients are third parties in the dispute between conflicting researchers or between researchers and their institutions, where both sides claim a property interest in the tissue. When 30,000 patients gave tissue to Dr. Catalona for prostate cancer research, he developed important and widely-used tests. But his university saw the tissue samples as a capital resource[99] and filed suit, arguing that it owned the tissue samples and had the right to use them as it wished "in its sole discretion."[100]

No informed consent document expressly provided that a patient could not require Washington University to transfer his tissue to another institution.[101] No form stated that Washington University "owned" the patient tissue.[102] The federal research regulations, which applied to Washington University, said that research subjects could withdraw at any time without penalty or loss of benefits[103] and that research participants cannot be asked to waive their legal rights.[104]

James Ellis, one of the patients, testified that he had donated his tissue for research on prostate cancer done by Dr. Catalona.[105] He wanted to benefit his son and other descendants who might be predisposed

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[90] U.S. Const. amend. XIV, § 1; *see Newman*, 287 F.3d at 788.

[91] *See Whaley*, 58 F.3d at 1113.

[92] *See id.*

[93] *See id.*

[94] *See id.*

[95] His agreement with the county gave him access to the eyes if he paid "all the counties' expenses in performing the autopsies whenever corneas were removed, and half those expenses when they were not." *See id.*

[96] *Id.* at 1112.

[97] *See id.* at 1116.

[98] *Id.*; *but see* Ga. Lions Eye Bank, Inc. v. Lavant, 335 S.E.2d 127, 128–29 (Ga. 1985) (holding that state's enactment of statute for removal of corneas overrode common law rules). The court in Georgia Lions Eye Bank failed to acknowledge that U.S. Constitutional constraints can override state statutes.

[99] A university e-mail stated "Bill Catalona wants to send nearly 2,000 documented samples to Hybertech for free [for research on a diagnostic test for prostate cancer]. Just from a cost recovery scenario, this should be worth nearly $100,000 to the university." Lori Andrews, "Who Owns Your Body? A Patient's Perspective on *Washington University v. Catalona*," 34 J.L. Med. & Ethics 398-407 (2006).

[100] Complaint, ¶¶ 14, 53, *Washington Univ. v. Catalona*, (Docket No. 4:03-cv-01065, E.D. Mo.) (on record with author).

[101] Andrews, *supra* note 99, at 402; Wash. Univ. v. Catalona, 437 F. Supp. 2d 985, 990 (E.D. Mo. 2006), *aff'd*, 490 F.3d 667 (8th Cir. 2007).

[102] *See Catalona*, 490 F.3d at 671.

[103] *See* 45 C.F.R. § 46.116(b)(8) (2024).

[104] *See id.* § 46.116(a)(6).

[105] Andrews, *supra* note 99, at 401.

to the disease.[106] If Washington University exercised control, it might sell the samples to the highest bidder for research on, say, baldness, since a cure for baldness had a bigger market than prostate cancer.

James Ellis was the opposite of Henrietta Lacks. He was white, male, and powerful.[107] Ellis was the Vice-President and General Counsel of a Fortune 500 Company.[108] His appearance in the case underscored for me that lack of control over one's tissue can affect anyone.

The Eighth Circuit Court of Appeals ruled against the patients, saying that they had made an inter vivos gift of the tissue to Washington University.[109] The court ignored the fact that the patients had a continuing interest in and control over the samples since, under the federal research regulations, they could terminate the use of their material in research.[110] But, much like Risa York did not want her embryo terminated (which Dr. Jones offered to do in lieu of giving her embryo back to her),[111] the prostate cancer patients did not want their samples thrown out. They wanted these irreplaceable resources — such as tumor tissue removed during surgery — used for prostate cancer research by Dr. Catalona.

If Washington University's logic were followed, the tissue could, in contravention of a patient's wishes, be used in research to create a human clone. It could be used for a type of research that violated a patient's religious beliefs, such as embryonic stem cell research. Or it could be sold to a biotech company for sheer commercial gain.[112]

Not Recognizing a Person's Property Interest in Tissue Can Lead to Abuses and Lack of Trust in the Research Enterprise

The specter of using people's tissue in contravention of their explicit desires and religious beliefs can chill potential research subjects' willingness to participate in research. This is exactly what happened when tissue from members of a Native American tribe, the Havasupai, was used in ways that the tribe members had not authorized.

The Havasupai have one of the highest incidences of type 2 diabetes anywhere in the world, with over half of Havasupai women and over one-third of Havasupai men being affected.[113] Members of the tribe alleged in a lawsuit that researchers at Arizona State University collected 400 blood samples from them for diabetes research, but that the university also performed unauthorized research on those samples related to schizophrenia, inbreeding, and population migration.[114] They asserted that the research on schizophrenia and inbreeding was stigmatizing to them, and that they would not have authorized the migration research because it conflicted with their religious origin story.[115] Once other Native American groups learned about how the Havasupai samples were being used, they severed ties with researchers and passed resolutions not to participate in research.[116]

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[106] *See id.*

[107] *See Profile of James Ellis*, Walker's Rsch., http://www.walkersresearch.com/profilePages/Show_Executive_Title/Executiveprofile/J/James_D_Ellis_100006411.html [https://perma.cc/6ZTA-PYV3] (last visited Oct. 1, 2024); Nate Raymond, *James Ellis (10) AT&T Inc.*, Am. Law. Media (July 18, 2007), https://www.law.com/corpcounsel/almID/900005486364/.

[108] *See* Walker's Rsch., *supra* note 107.

[109] Wash. Univ. v. Catalona, 490 F.3d 667, 676–77 (8th Cir. 2007).

[110] *See* 45 C.F.R. §§ 46.116(a)(8), (b)(2) (2024).

[111] *See* discussion *supra* accompanying notes 75–85.

[112] *See* Andrews & Nelkin, *supra* note 6, at 27–28 (describing commercial sale of Mo-cell line, derived from John Moore, to biotechnology company).

[113] *See* Jana Bommersbach, *Arizona's Broken Arrow: Did Arizona State University Genetically Rape the Havasupai Tribe?*, Phx. Mag., Nov. 2008, at 134, https://janabommersbach.com/arizonas-broken-arrow-did-arizona-state-university-genetically-rape-the-havasupai-tribe/ [https://perma.cc/3SGY-2SPX].

[114] *See* Complaint at 10, 14, Havasupai Tribe v. Ariz. Bd. of Regents, 204 P.3d 1063 (Ariz. App. 2008) (No. 1 CA-CV 07-0454).

[115] *See id.* at 14; *see also* Erin Blakemore, *Why the Navajo Nation Banned Genetic Research*, History (July 11, 2023), https://www.history.com/news/why-the-navajo-nation-banned-genetic-research [https://perma.cc/Y62D-F99R].

[116] Nanibaa' A. Garrison, *Genomic Justice for Native Americans: Impact of the Havasupai Case on Genetic Research*, 38 Sci. Tech. & Hum. Values 201, 204 (2012).

A federal district court found that the Havasupai had asserted valid claims for intentional infliction of emotional distress, negligent infliction of emotional distress, civil rights violations, negligence, and gross negligence.[117] In April 2010, the researchers' university settled with the Havasupai, paying $700,000 to forty-one members of the tribe.[118] Tribe members undertook a ceremony marking the return of the samples to the tribe.[119]

Sadly, some health care institutions have not learned the lessons of these cases. On my last visit to Northwestern University's Medical Center for health care, I was asked for my signature in the small slit of a digital device. The clinic receptionist assured me that "this is just so that we can bill your insurer." When I asked to see the form that I was being asked to sign, a supervisor begrudgingly printed out the four-page, single-spaced form, which contained provisions that would force me to agree to research on my tissue.[120] When I wanted to delete that provision, they told me I had to agree to it or I could not be seen by my doctor.

Despite long-standing ethical guidelines (from the time of the Nuremberg Code to the current federal research regulations) guaranteeing that research is not a matter of conscription, patients at Northwestern and many other health care institutions today are treated like Henrietta Lacks in terms of unconsented-to research on their tissue.

Health care professionals and institutions that are still using people's tissue without informing them or providing an opportunity to consent or refuse need to think about how they will be judged by society in the future. In many instances, patients and research subjects would be able to allege a property claim, an unjust enrichment claim, or, if the defendant is a state actor, a Fourteenth Amendment claim,[121] but people may not realize their tissue has been taken or used without their consent. Even if institutions that use tissue without consent feel their actions are supported by current law, will they be in the position of the doctors and researchers in the Henrietta Lacks case, where, decades later, their actions will be considered unethical, reprehensible, and maybe even legally problematic?

What is the emotional impact on patients (and the practical impacts on the medical and research enterprises) when you tell someone their precious tumor tissue cannot be used for the type of research they agreed to because the university can find a higher price for it elsewhere? What is the impact of telling an in vitro fertilization patient that her physician is willing to destroy her embryo, do research on it, or give it to someone else, but not give it to her? What happens when you do un-consented-to research on people's tissue that violates their religious beliefs? Should a hospital, medical center, or coroner's office escape liability when they fail to even notice that employees are selling patients' body parts? With the success of unjust enrichment, property, and Constitutional claims, patients and other tissue sources may now be able to address some of these abuses.

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[117] Tilousi v. Ariz. State Univ. Bd. of Regents, No. 04-CV-1290, 2005 WL 6199562, at *6-7 (D. Ariz. Mar. 3, 2005) (order denying in part and granting in part motion to dismiss).

[118] Amy Harmon, *Indian Tribe Wins Fight to Limit Research of Its DNA*, N.Y. TIMES (Apr. 21, 2010), https://www.nytimes.com/2010/04/22/us/22dna.html [https://perma.cc/BX3M-HGRQ].

[119] *Id.*; Katie Shoultz, *ABOR Settles Lawsuit with Havasupai Tribe Over Blood Samples*, STATE PRESS (Apr. 22, 2010, 4:00 PM), https://www.statepress.com/article/2010/04/abor-settles-lawsuit-with-havasupai-tribe-over-blood-samples# [https://perma.cc/P78D-NDP7].

[120] *Consent to Medical Care Agreement, Form 43004*, NW. MED. (Apr. 2024), https://www.nm.org/-/media/northwestern/resources/patients-and-visitors/northwestern-medicine-universal-consent-form.pdf [https://perma.cc/L4E8-EB6L].

[121] States, through the adoption of their versions of the Uniform Anatomical Gift Act, give rights to individuals to control what is done with their tissue after they die. UNIF. ANATOMICAL GIFT ACT §10 (UNIF. L. COMM'N 2006) (amended 2009); *see also Uniform Anatomical Gift Act*, UNIF. L. COMM'N (2024), https://www.uniformlaws.org/committees/community-home?CommunityKey=015e18ad-4806-4dff-b011-8e1ebc0d1d0f [https://perma.cc/2XJY-6XZ6] (showing map of state enactment). However, states generally have not adopted statutes providing that tissue is the property of the living individual. That protection, where available, is a common law one. The exception is genes, where some states have decreed DNA and/or genetic information as the property of the individual. In the insurance context, see COLO. REV. STAT. § 10-3-1104.7(1)(a) (2024); FLA. STAT. § 760.40 (2) (2024); GA. CODE ANN. § 33-54-1(1) (2024); LA. STAT. ANN. § 22:1023(E) (2024). However, Colorado, Georgia, and Louisiana permit the use of "genetic information" for research purposes when the identity of the individual is not disclosed. COLO. REV. STAT. § 10-3-1104.7(5) (2024); GA. CODE ANN. § 33-54-6 (2024); LA. STAT. ANN. § 22:1023(D)(4) (2024)

Thinking about medicine's "future history" is particularly important because we are not dealing with widgets here. The "bio" in biotechnology is generally pieces of people like you and me, whether they are poor and disenfranchised like Henrietta Lacks and the Havasupai or rich like James Ellis. We all have, literally, skin in this game.

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Cite this article: Andrews, L. (2024), 'Skin in the Game: Human Tissue as Property', *American Journal of Law & Medicine*, **50**, pp. 191–203. https://doi.org/10.1017/amj.2025.5