

Researchers discuss the ethical challenges of studying DNA from a 18th–19th century African American community

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A population genetics team recently identified the genetic relationship between over 40,000 23andMe users and a population of enslaved and free African Americans that lived in Catoctin Furnace, Maryland between 1776–1850.

Over the course of this study, the researchers considered how best to inform descendants and other genetic relatives of their genetic connection to the site. The group has published their considerations and the [ethical questions](#) they have encountered on August 3rd in the *American Journal of Human Genetics*.

"This study required us to consider several [ethical issues](#) that had not been explicitly addressed in the existing literature on ethics in ancient DNA," say the authors, led by Éadaoin Harney, a population geneticist at 23andMe. "This work has contributed to community and national conversations about the role that scientific approaches can play in restoring information about the lives of enslaved people that would otherwise be lost to history."

The team's genetic analysis hoped to further the goals of community stakeholders who wish to "identify and foster a Catoctin descendent community" by identifying previously unknown connections to living descendants. They analyzed [human remains](#) from an undocumented African American cemetery under stewardship of the Smithsonian and in coordination with The Catoctin Furnace Historical Society and self-identified descendants of the Catoctin Furnace community.

Most stakeholders agreed that these genetic results should be shared with relevant 23andMe users, but with proper user consent. The researchers note that people might be distressed to find out they have an ancestral connection to slavery, so an opt-in program could be an optimal way of letting users decide for themselves whether they want to learn about their genetic links to Catoctin Furnace or not.

In addition, the team warns that geneticists need to be wary of "biologically gatekeeping" who is and is not a Catoctin Furnace stakeholder. There is already a self-identified community of stakeholders who are connected by cultural and kinship bonds, and any

member's genetic results should not minimize their [group identity](#).

"Returning inaccurate results or returning results in a confusing way may actively harm community stakeholders, people or organizations who serve as stewards for human remains, those who serve in other roles that involve educating the public about specific historical individuals or sites, or broader public understanding," say the authors. "Reports created by genetic ancestry companies should be created with enough educational content and detail so that customers with shared genetic connections can interpret their results without the need for guidance from outside organizations."

Even though 23andMe has a genetic dataset more than an order of magnitude larger than any publicly available genetic dataset and thus was an optimal organization for identifying Catoctin descendants and other relatives, many genetic researchers argue that companies should not be able to benefit financially from ancient genetic datasets tied to living descendants. To address this concern, 23andMe and collaborators at Harvard and the Howard Hughes Medical Institute agreed that the Catoctin data could not be used for non-research purposes until after it was made publicly available.

23andMe also refrains from sharing individual-level [genetic data](#) in order to protect their customers' privacy, but this can make it difficult for other researchers to reproduce published results. To address this dilemma, 23andMe has agreed to rerun genetic comparisons of this study upon request for academic and non-profit researchers for a limited amount of time.

"There is no perfect solution to this problem, but weighed against this is the fact that leveraging a genetic database as large as 23andMe's in ancient DNA powers research that otherwise would be impossible. In fact, it is possible that 23andMe's high research participation rate can be

attributed in part to the strong privacy protections that are offered to research participants," the authors write in the paper.

More information: Á%oadaoin Harney, Ethical considerations when co-analyzing ancient DNA and data from private genetic databases, *The American Journal of Human Genetics* (2023). [DOI: 10.1016/j.ajhg.2023.06.011](https://doi.org/10.1016/j.ajhg.2023.06.011).
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