Long process of learning about First Baptist graves begins

By Madison Peek
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After years of waiting and wondering, the historic First Baptist Church excavations are fully underway. The Colonial Williamsburg archaeology team has successfully exposed the skeletal remains in the first grave, kicking off the analysis process.

Samples have been extracted for researchers at the University of Connecticut and William & Mary's Institute for Historical Biology to analyze. While the research process will take at least six more months, researchers are hopeful about using results to tell a complete story about those who are buried in the church's graveyard.

The process for both analyses can begin with teeth; teeth are very good sources of DNA information because of their bone density, and teeth structure can convey health history, the geological landscapes the individual grew up in or even what they ate. DNA analyses also can use dense bones like the temporal bone, located by the ear, and osteological analysis can include the full skeleton — but much can be gleaned about the individual from a small sample of a tooth.

Once the sample arrives at the anthropology lab at the University of Connecticut, National Science Foundation post-doctoral fellow Dr. Raquel Fleskes will analyze its DNA. First, a small sample will be taken from the bone and ground into a powder. The powder is then incubated and soaked in a solution that pulls out the DNA from the cells. The DNA is then separated out, tagged, and then put through a process called sequencing, which determines the order of the bases that make up a DNA molecule. This information will tell Fleskes how genetic information is stored in that molecule. This process, which is done solely by Fleskes and almost entirely by hand, takes about a week. The sequenced DNA information then undergoes bioinformatics, which is processed by a computer for three to four months. It pulls out all information possible, like ancestral profiles, any relation between samples, overall DNA preservation and if there's enough information to do further testing.

“I like to think that the amount of care that we have to do in order to make sure our protocol works is also a reflection of the amount of care that we take when we are working with these remains,” Fleskes said. “Thinking of them as people, not just as a DNA sample. There’s the care (that) is embedded throughout all the process.”

At the same time, William & Mary’s Institute for Historic Biology will analyze a different sample, perhaps several bones from a grave, later down the line.

Their analysis process begins with observation, being able to glean information from the tooth by its characteristics and the way it’s formed, then moves to chemical analysis. The researchers specifically focus of the enamel of the teeth because it can record chemical exposures that occur earlier in life and can help determine where the individual came from, what they ate and other environmental factors they grew up in.

Reginald F. Davis, from left, pastor of First Baptist Church, Connie Matthews Harshaw, a member of First Baptist, and Jack Gary, Colonial Williamsburg’s director of archaeology, stand at the brick-and-mortar foundation of one of the oldest Black churches in the U. S., on Oct. 6, 2021, in Williamsburg. Archaeologists began excavating three suspected graves at the site on July 18, commencing a monthslong effort to learn who was buried there and how they lived. **BEN FINLEY/AP**

To chemically analyze the enamel, the tooth is cut in half to reveal the inner portion, and a specialized laser is used to cut a specific sample of the enamel. That sample is then dissolved in acid, then through a process called mass spectrometry, the ratio of chemical compounds in that sample, which helps answer questions about early life. Like the DNA analysis, this process is also expected to take about six months, but the process times depend on various factors.

The phrase “you are what you eat” is true when it comes to bone analysis, William & Mary anthropologist Joseph Jones said.

“We just exploit that very literal sense that we incorporate in our environments into our bodies,” Jones said. “Where do your bones and teeth come from? They’re actually made up of something. That something, at least in part, is the kind of environment that you grew up around.”

Researchers emphasized that the DNA analysis, the osteological analysis and the archaeological research that is being done at the First Baptist Church site are essential to building a full picture of the individuals buried there.

At the end of six months, researchers will try to answer the questions the community has had since the beginning — who are these buried people? What did they look like? What were their lives like? Are they related to any living descendants today?

The community-led aspect of the archaeological project is what makes the research impactful and special, researchers said.

“We’re seeing this trend across the nation. And this is just one more, albeit a very important, I think, contribution to this dialogue about how to properly and respectfully address these ancestral remains,” Jones said. “(First Baptist Church) is a prominent example of communities taking charge of their ancestral relationships.”