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# Insights

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## The Book of Mormon at the Bar of DNA “Evidence”

On 29 January a capacity crowd gathered in the Harold B. Lee Library auditorium to hear BYU biology professor Michael F. Whiting address the topic “Does DNA Evidence Refute the Authenticity of the Book of Mormon? Responding to the Critics.” The size of the audience suggested the great interest people have in the role and limitations of DNA research in unlocking the past, especially the religious past.

Whiting began by noting that critics have recently rushed to judgment proclaiming that DNA evidence has dealt a deathblow to the Book of Mormon. As they see it, Native Americans have been shown to be of Asiatic ancestry, whereas the lineage history in the Book of Mormon, the critics claim, predicts a Middle Eastern genetic signature among the descendants of the Lamanites.

DNA analysis is a marvelous tool for biological inquiry, Whiting said, but it can answer only certain kinds of scientific questions—and the Book of Mormon, being a religious history, is not open to direct scientific confirmation.



Dr. Michael Whiting emphasizes a point during his presentation on DNA and the Book of Mormon.

A specialist in molecular systematics who sits on review panels for the National Science Foundation to evaluate proposed projects involving NSF-funded DNA research, Whiting also finds the critics’ argument scientifically flawed. For example, the

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## Brown Bag Report

On 13 November John F. Hall, professor of classical languages and ancient history at Brigham Young University, spoke about his new book, *New Testament Witnesses of Christ: Peter, John, James, and Paul*. The book draws on early Christian writings to show that the “four pillars” of early Christianity—Peter, John, James (the brother of Jesus), and Paul—consistently testified of the life and mission of Jesus Christ. The book is important,

Hall believes, because many professing Christians, even many ministers, do not accept Christ as the literal Son of God even though the scriptures and the writings of the early church fathers are clear on the matter. In his book Hall also deals with issues of scholarly debate, such as whether the Gospel of John was the last biblical book written and whether tradition has judged Peter too harshly as a man of little faith and learning, that are illuminated by the Greek text and by an understanding of Greek

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culture. Hall's book is divided into sections that review the backgrounds of the four pillars, apostolic authority, the Jewish world, and the Greek and Roman world.

On 15 January James E. Faulconer, professor of philosophy at Brigham Young University, spoke about his research on the structure of Paul's Epistle to the Romans. He began by describing the two major outlines of Romans used in the Christian world. The first, used mainly by Protestants, begins with an introduction (Romans 1), followed by a discussion of faith (chaps. 2–4), a description of a life of faith (chaps. 5–8), and examples of people who lived lives of faith (chaps. 9–15). The second outline, used mainly by Catholics, begins with a discussion of justice and mercy (chaps.

1–8), followed by an explanation of the covenant (chaps. 9–15). Faulconer presented his own outline of the book of Romans, entitled "Faith, Life, and Covenant." His outline begins with a discussion of faith in its relation to justice and mercy (chaps. 1–8). In this first section, Faulconer said Paul teaches that all men are condemned because of sin, but that the gospel has the power to save all those who exercise faith (chaps. 1–4). In chapters 5–8, Paul teaches that through the power of Christ's atonement, men can be freed from the bonds of sin to live by the Holy Ghost and to become part of God's covenant people. Faulconer said that the second half of Romans (chaps. 9–15) is an explanation of the covenant and that the covenant is the enactment of God's justice and mercy. God is faithful to his part of the covenant, he concluded, and the covenant people are obligated to be obedient, through the power of faith, to God. 📖

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DNA evidence they refer to is simply their interpolation of results from other people's research that was not specifically designed to test hypotheses derived from the Book of Mormon.

The genetic lineage history as described in the Book of Mormon is "in a class of problems that is very difficult to test via DNA evidence," Whiting said. "DNA analysis can neither easily refute nor corroborate the lineage history as put forth in the Book of Mormon, . . . and it does nothing to speak to the authenticity of the text." According to Whiting, "there are many assumptions which must be satisfied, many hypotheses which must be properly formulated, and many caveats associated with the data and analyses which must be acknowledged before the results can have any scientific merit."

While there are no explicit statements in the Book of Mormon whose veracity can be tested through DNA research, certain implicit ideas can be thus tested, Whiting said. The "global colonization hypothesis" is one example. If the Jaredites, Mulekites, and Lehitites came to a land devoid of

resident populations and eventually expanded to fill all of North and South America while retaining a Middle Eastern genetic signature all the while, then their descendants should carry the same tell-tale genetic markers. That Native Americans (the presumed genetic descendants of the Lamanites) carry an Asiatic genetic signature shows that the hypothesis (with its many assumptions) appears incorrect, he said.

That exercise does not disprove the Book of Mormon, Whiting noted, because the global colonization hypothesis is not the only one emerging from the Book of Mormon. In fact, for decades some Book of Mormon scholars have favored the "local colonization hypothesis," which assumes that the colonizers arrived in a land already inhabited with people of unknown genetic origin, that there was gene flow between those groups, and that the range of Nephite-Lamanite settlement and expansion was of limited geographic scope. In this case, using DNA to map out a genealogy is fraught with difficulty. Results would be nondiscriminatory and unclear, Whiting said.

To illustrate that last point, Whiting, for the remainder of the lecture, assumed his role of NSF

reviewer and evaluated whether a proposal to test the validity of the global colonization hypothesis via DNA evidence would be based on good science or not. He then discussed 12 complicating factors that would need to be resolved before an investigation could be responsibly undertaken. A few of those points are summarized here.

- *Was there a unique Middle Eastern genetic signature in the source population?* That there was cannot be taken for granted. Many cultural and racial groups today do not have discrete markers that unambiguously identify them as members of those groups, and we know that the Middle East has been at the crossroads of civilization for millennia. Also, it is possible that the colonizers possessed genetic variants that blurred their actual lineage.

- *What were the effects of genetic drift?* In small human populations, random sampling will cause some genetic markers to disappear and others to become widespread. Such skewing in the frequency distribution of genetic markers blurs historical relationships.

- *Did the colonizers merge with an existing population?* Inter-marriage with a native population of unknown genetic origin would make it difficult to identify which genetic signature was passed to the descendants. A large native population might quickly swamp out the colonizers' genetic markers.


- *Who are the living genetic descendants of the Lamanite lineage?* Whom do you sample? The limited geography model means that you cannot sample just anywhere in North and South America. In addition, genetic mixing after Book of Mormon times is problematic, possibly obliterating a "Lamanite" genetic signature.

- *How do you identify with certainty the Middle Eastern population containing the ancestral genetic signature that you will use for comparison?* The genetic markers in the source population may have changed over time through natural selection, mutation, and recombination. Other factors, if unaccounted for, can also yield misleading results.

Whiting emphasized that he does not believe that DNA is an unreliable tool or that the science has so many assumptions that the results are never believable, because good, hypothesis-driven science can yield accurate results if the experiments are properly designed and the data is properly analyzed. He concluded by restating three key points: (1) the local colonization hypothesis is hard to test because the history of the Lamanite lineage is nebulous, (2) it is unlikely that DNA evidence can either refute or corroborate that hypothesis, and (3) it is foolish to base one's testimony of the Book of Mormon on the tentative results of DNA analysis.

"I would be just as critical of someone who rose up and said, 'I now have DNA evidence proving the Book of Mormon is true' as I am of critics who say, 'We have evidence that proves it is not true.' The science is tough, and the answers do not come unambiguously," Whiting said.

The Institute-sponsored event concluded with a question-and-answer session in which questions from the audience were directed to a panel composed of Whiting and other specialists from BYU: Keith A. Crandall, assistant professor of population genetics; David A. McClellan, assistant professor of molecular evolution; Heath Ogden, a doctoral candidate in molecular systematics; and Daniel C. Peterson, editor of *The FARMS Review*. Issues touched on included the idea that because the Book of Mormon does not make its internal geography explicit, attempts to solve certain questions scientifically will not be assumption-free. A few people expressed their confusion over the term *Lamanite*, which, as Peterson noted, has different meanings at different times in Book of Mormon history.

A detailed article by Whiting on this subject is scheduled to appear in a future issue of the *Journal of Book of Mormon Studies*. 

**View Dr. Whiting's presentation "Does DNA Evidence Refute the Authenticity of the Book of Mormon?" and many other video lectures on the FARMS Web site at <http://farms.byu.edu/multimedia>.**