What Librarians Need to Know about DNA

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Objectives

- To understand what "genetic exceptionalism" is and why DNA testing is now critical for your genealogical patron
- To gain a basic knowledge of what DNA testing can and cannot do for genealogical research
- To identify relevant resources for the library's collection and for the librarian's continuing education

Librarians had to learn how to…

- Do lookups in catalogs and PERSI
- Operate a microform reader
- Use the Web to search for and access online resources
- Use online subscription services
- Teach these skills to patrons
- Assist patrons in doing these things

"Genetic exceptionalism is the belief that genetic information is special and needs to be treated in a different way from other medical or genealogical information." ISOGG Wiki

A "genealogical record" is "a source of information that can tell us something about a person (usually an ancestor or other relative), such as details about the events of their lives, or how the person might be related to us or to others". Under this definition, DNA is a genealogical record.

DNA comes in several types (mitochondrial DNA, Y-DNA, autosomal DNA, and X-DNA), each type having its own inheritance pattern.

Mitochondrial DNA (mtDNA) is inherited along the matrilineal line. Because it mutates slowly, and because most genealogists have extreme difficulty in getting back to earlier generations of matrilineal ancestors, mtDNA is the least useful for genealogical research.

Y-DNA, which only males have, is inherited along the patrilineal line. Because it tends to follow the surname line, it can be useful in research involving a brick wall for a given surname.

Autosomal DNA is inherited from all ancestral lines (50% from the father, 50% from the mother). It can be used to solve genealogical questions involving up to about 3rd-great-grandparents, or involving 4th and closer distant cousins. It may or may not help with cousins more distant than 4th.

X-DNA follows a unique inheritance path, such that males get X-DNA only from their mothers, while females get X-DNA from both parents. X-DNA inheritance charts can be found online.

As with traditional genealogical research, the researcher using DNA testing should start with a specific research problem or question. This will help to determine which test(s) should be taken, and who should take them. Some research questions may involve multiple tests or multiple test takers.

Autosomal tests are offered by all major DNA testing companies (AncestryDNA, 23andMe, MyHeritage, Family Tree DNA, and Living DNA). FTDNA also offers Y-DNA and mtDNA tests. All companies give ethnicity estimate results and matches.

Raw DNA data can be downloaded as a file from one of the major companies and then uploaded to other sites (MyHeritage, FTDNA, Living DNA, GEDmatch).

For DNA-related terms or acronyms, consult the ISOGG Wiki at isogg.org/wiki

For your own reading and for your library's circulating collection:

Southard, Diahan. *Your DNA guide – the book*. 2020.

Bettinger, Blaine T. *The Family Tree guide to DNA testing and genetic genealogy (2nd ed.)*. 2019.

Bettinger, Blaine T. and Debbie Parker Wayne. *Genetic genealogy in practice.* 2016.

Other sources for learning include webinars, podcasts, blogs, YouTube videos, genealogy magazine articles, Facebook groups, and genealogy conferences.