

**Board for Certification of Genealogists**

**White Paper**

**Certification and Standards**

**In the Practice of Forensic Genetic Genealogy**





















## Appendix A: The Board for Certification of Genealogists

### *History, Operation, Code of Ethics, Certified Genealogist<sup>®</sup>, and Certified Genetic Genealogist<sup>SM</sup> Credentials*

The Board for Certification of Genealogists is a nonprofit organization founded in 1964 as a professional credentialing body for genealogists. The cream of the genealogy community came together to create a way to ensure quality work for hire. The founders included four fellows of the American Society of Genealogists (ASG), three leaders of the National Genealogical Society (NGS), and three members of allied professions.

Since 1964, BCG has set the standards for competence and ethics in genealogical research through certification, lectures, and publications. These attainable, uniform standards of competence in research, evidence analysis, writing, and kinship determination are generally accepted for the field. First published in book form in 2000, they were clarified and updated in 2014.

BCG originally offered two certifications: Certified Genealogist (CG) and Certified Genealogical Records Specialist (CGRS). Later additions were Certified Genealogical Lecturer (CGL), Certified Genealogical Instructor (CGI), Certified American Lineage Specialist (CALs), and Certified American Indian Lineage Specialist (CAILs). All four research credentials—CG, CGRS, CALs, and CAILs—were merged into the CG credential in 2005. This change simplified the system and acknowledged that the essential skills—research, citation, analysis and correlation, conflict resolution, and writing—apply to all specialties. The education credentials were merged into the CGL credential.

For more than a decade, genealogists seeking the Certified Genealogist credential could include DNA evidence in their portfolios. In May 2023, the Board of Trustees voted to establish a new credential, Certified Genetic Genealogist. Those who have achieved the Certified Genealogist credential will now have the opportunity to apply for an additional advanced credential focusing on DNA expertise. Currently, portfolio elements, judging rubrics, and acceptance criteria are being finalized. Experienced experts will judge portfolios including DNA work. The first applications will be accepted early in 2024. Applications for certification take the form of portfolios containing elements defined by *The BCG Application Guide*. Each portfolio is graded by three independent judges working from rubrics that measure work against Standards. Judges meet biannually for training, and work at the direction of a judge coordinator and the five-member committee of advanced and experienced judges. Only those genealogists who show excellent work in their original portfolios are invited to be judges.

BCG has two modes to address issues that arise. Any applicant who believes that an application was wrongly denied can appeal to the fifteen-member Board of Trustees for re-evaluation. All fifteen board members judge the portfolio, voting to sustain or overturn the results of the original judges. If complaints about a Certified Genealogist's conduct arise, they are handled by the six-member Executive Committee. These complaints may include ethics, rates, or work product quality. After submission of supporting documentation by the client and the genealogist, the Executive Committee meets in executive session with corporate counsel to decide on a course of action. Responses can range from restitution to the loss of the credentialed status or even public censure.

BCG's triannual educational newsletter, *OnBoard*, was first published in January 1995. It provides news, associate profiles, and feature articles on certification, genealogical standards, skill-building, and under-utilized sources.

In 2000 BCG established the BCG Education Fund. An independent charitable trust, the BCG Education Fund (a Massachusetts charitable trust) provides multiple opportunities for education including an annual day-long workshop, "Putting Skills to Work". The Education Fund also sponsors the semi-annual Helen F. M. Leary Distinguished Lecture Series and administers the annual Donald Mosher Memorial Award in colonial Virginia scholarship.

Beginning in 2002, BCG offered skill-building lecture tracks at national genealogy conferences. A full track is presented annually at the National Genealogical Society (NGS) Family History Conference. Today a series of free online lectures open to the general public also helps Certified Genealogists achieve continuing education credits.

## Appendix B: Rapid Changes in Law Enforcement and Use of Forensic DNA Evidence

**1964**

The Board for Certification of Genealogists was established in Washington, D.C.

**1972**

*The American Genealogist*, one of three major genealogical journals, began to publish matrilineal lineages.<sup>19</sup>

**1984**

At the University of Leicester, English scientist Alec Jeffreys realized that an electropherogram acts as a DNA fingerprint, unique to each individual.<sup>20</sup>



Figure 1: Dr. Alec Jeffreys holding up an electropherogram after his discovery that it can be used for DNA fingerprinting. (Terry Smith / LIFE Images Collection / Getty)

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<sup>19</sup> John Bradley Arthaud, "An Umbilical Line," *The American Genealogist* 48 (1972):247.

<sup>20</sup> Ian Cobain, "Killer breakthrough – the day DNA evidence first nailed a murderer," *The Guardian*, posted June 7, 2016; <https://www.theguardian.com/uk-news/2016/jun/07/killer-dna-evidence-genetic-profiling-criminal-investigation>.

## 1986

First use of DNA as forensic evidence occurred in the United Kingdom when Richard Buckland was exonerated and freed from pre-trial detention.<sup>21</sup>

## 1987

First use of DNA as forensic evidence in the US occurred when the State of Florida convicted Tommie Lee Andrews.<sup>22</sup>

## 1989

The Florida Fifth District Court of Appeal affirmed the use of DNA by denying the appeal by Tommie Lee Andrews.<sup>23</sup>

## 1990

The FBI began to study the implementation of DNA testing for law enforcement.<sup>24</sup>

## 1994

United States Public Law 103-322 was enacted. *The Violent Crime Control and Law Enforcement Act of 1994* provided funding for the FBI to initiate DNA testing.

Subtitle C: DNA Identification - DNA Identification Act of 1994 - Amends the Omnibus Act to authorize the use of drug control and system improvement grants to develop or improve in a forensic laboratory a capability to analyze deoxyribonucleic acid (DNA) for specified identification purposes. Sets forth provisions regarding: (1) restrictions on the use of funds; and (2) reporting and recordkeeping (including access to records) requirements. Authorizes appropriations.

(Sec. 210303) Requires the Director of: (1) the FBI to appoint an advisory board on DNA quality assurance methods from among nominations proposed by the head of the National Academy of Sciences and professional societies of crime laboratory officials and issue standards for quality assurance; and (2) the National Institute of Justice (NIJ) to make specified certifications to the House and Senate Judiciary Committees regarding the establishment of a proficiency testing program for DNA analyses.

(Sec 210304) Authorizes the Director of the FBI to establish an index of DNA identification records of persons convicted of crimes, and analyses of DNA samples recovered from crime scenes and from unidentified human remains.

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<sup>21</sup> Ibid.

<sup>22</sup> Charity Lynn Clayborn, "Evidence of DNA Fingerprinting Admitted for Identification Purposes in Rape Trial. Andrews v. State of Florida," *University of Arkansas at Little Rock Law Review*, vol. 12 (1990): article 4, p. 543; <https://lawrepository.ualr.edu/cgi/viewcontent.cgi?article=1875&context=lawreview>.

<sup>23</sup> Ibid., pp. 543-544.

<sup>24</sup> Office of the Inspector General, Department of Justice, "Introduction," *Combined DNA Index System Operational and Laboratory Vulnerabilities*, Audit Report O6-32, May 2006; <https://oig.justice.gov/reports/FBI/a0632/intro.htm>.

(Sec. 210305) Sets forth proficiency testing and privacy protection requirements and penalties for violations.<sup>25</sup>

## 1998

The FBI launched the Combined DNA Information System (CODIS). The FBI supplied software to testing localities. State law determined use of DNA tests in the state database. Although criteria differed among states, the Memorandum of Understanding that each state laboratory signed with the FBI mandated that the national law applies to DNA uploaded to NDIS.

The FBI has distributed CODIS software free of charge to state or local law enforcement laboratory performing DNA analysis. Before a laboratory is allowed to participate at the national level and upload DNA profiles to NDIS, a Memorandum of Understanding (MOU) must be signed between the FBI and the applicable state's DNA Information System (SDIS) laboratory. The MOU defines the responsibilities of each party, includes a sublicense for the use of CODIS software, and delineates the standards that laboratories must meet in order to utilize NDIS.<sup>26</sup>

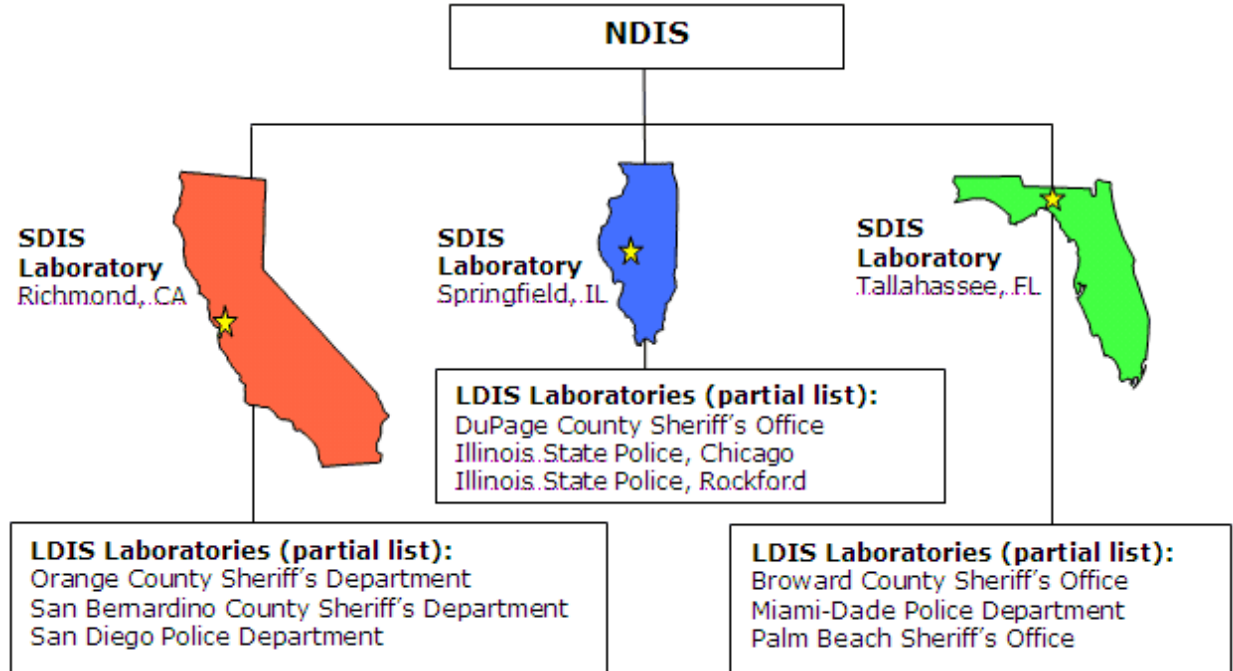


Figure 2: The hierarchy of Local, State, and National DNA Index Systems which -- taken as a whole -- comprise CODIS. Office of the Inspector General, Department of Justice, *OIG Report 06-32*.

<sup>25</sup> H.R.3355 - Violent Crime Control and Law Enforcement Act of 1994; <https://www.congress.gov/bill/103rd-congress/house-bill/3355>, Subtitle C.

<sup>26</sup> Office of the Inspector General, Department of Justice, "Introduction," *Combined DNA Index System Operational and Laboratory Vulnerabilities*, Audit Report O6-32, May 2006; <https://oig.justice.gov/reports/FBI/a0632/intro.htm>.

## 2000

The Board for Certification of Genealogists published its *Standards Manual*.<sup>27</sup>

Family Tree DNA (FTDNA) made DNA testing (specifically Y-DNA STR) available to consumers.<sup>28</sup>

## 2002

Ancestry.com and Relative Genetics offered a short-lived DNA testing service (Y-DNA, mtDNA) to consumers. MyFamily.com and Relative Genetics partnered to deliver the most extensive genetic genealogical testing service in the world.<sup>29</sup>

## 2005

In April, the International Society of Genetic Genealogy was established.<sup>30</sup>

## 2007

Ancestry.com made DNA testing (specifically Y-DNA STR and mtDNA) available to consumers.<sup>31</sup>

In November, 23andme launched direct-to-consumer DNA testing (specifically atDNA) in the U.S.<sup>32</sup>

## 2010

In May, FTDNA started offering atDNA testing.<sup>33</sup>

GEDmatch was founded by Curtis Rogers and John Olson. The site allowed users from testing companies to upload their DNA results and compare them to the DNA of other users.<sup>34</sup>



Figure 3: Human genome SNP autosomal DNA test microchip. Depending on the chip, from 600,000 to 1,200,000 locations can be tested. [Used under GNU Common License.](#)

<sup>27</sup> Board for Certification of Genealogists, *The BCG Genealogical Standards Manual* (Orem, Utah: Ancestry Publishing, 2000).

<sup>28</sup> "The Moneymakers: Bennett Greenspan, DNA Testing Crosses Paths with Genealogy," *Houston Chronicle*, January 18, 2005; <https://www.chron.com/business/article/moneymakers-bennett-greenspan-1657195.php>.

<sup>29</sup> Nebula Genomics, "Ancestry review — Is it still the best ancestry test? *Nebula Genomics*, posted 6 June 2020 (<https://medium.com/nebula-genomics/ancestry-review-is-it-still-the-best-ancestry-test-5697705ec24c>).

<sup>30</sup> "Genetic Genealogy 2005," *International Society of Genetic Genealogy*, undated; [https://isogg.org/wiki/Timeline:Genetic\\_genealogy\\_2005](https://isogg.org/wiki/Timeline:Genetic_genealogy_2005).

<sup>31</sup> "Ancestry.com Launches Online DNA Testing Service Combining Science and Social Networking," *Ancestry*, posted October 16, 2007; <https://blogs.ancestry.com/circle/?p=1956>.

<sup>32</sup> Thomas Goetz, "23AndMe Will Decode Your DNA for \$1,000. Welcome to the Age of Genomics," *Wired*, posted November 17, 2007; <https://www.wired.com/2007/11/ff-genomics/>.

<sup>33</sup> Diane Elder and Nicole Dyer, "DNA Milestones – Look at the Progress! *FamilyLocket.com*, posted 17 April 2022 (<https://familylocket.com/dna-milestones-look-at-the-progress/>).

<sup>34</sup> "About," *GEDmatch.com*, (<https://www.gedmatch.com/about/>).

## 2012

Ancestry offered consumer autosomal (atDNA) testing.<sup>35</sup>

## 2014

The collection of a suspect's DNA was placed on secure legal footing via a 2014 Supreme Court decision.<sup>36</sup>

Michael Usry was suspected in 1996 Idaho murder of Angie Dodge because police and reporters misunderstood the word "match" as it pertains to a 34/35 match with Y-DNA. So-called surname search eventually proved to be correct in 2019 when another man, Brian Leigh Dripps, who was genetically a Usry Y-line descendant, but did not bear the surname, was arrested.<sup>37</sup>

## 2016

MyHeritage offered consumer atDNA testing.<sup>38</sup>

## 2017

Following the 2016 release of an advanced genetic genealogy workbook edited by the late Debbie Parker Wayne, the Boston University Genealogical Research Certificate Program added a graduate level module

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<sup>35</sup> "Ancestry.com Launches Autosomal DNA Test," *Ancestry*, posted May 13, 2012; <https://bloodandfrogs.com/2012/05/ancestrycom-launches-autosomal-dna-test.html>.

<sup>36</sup> *Riley v. California*, 573 U.S. 373, 393 (2014).

<sup>37</sup> Jim Mustian, "New Orleans filmmaker cleared in cold-case murder; false positive highlights limitations of familial DNA searching," *The New Orleans Advocate*, 12 March 2015. It is important to remember the meaning of "Match" differs between STR and SNP testing.

Match (in CODIS testing, for the meaning of the term when used in SNP testing, see below): only two types of matches are available in CODIS. The exact match is to the person, excluding the possibility statistically that the sample belongs to someone else. In an exact match, the length of STR at each testing site in each sample is the same.

Some states permit familial matching in CODIS. For a familial match, statistics must show that only a close family member (parent, sibling, child) could not be excluded. Within STR technology, this is a calculation based not just on the number of loci that have exact STR lengths but also on the prevalence of that length of STR at that position within the general population. It is very easy to have up to seven loci match in STR, but have no relationship at all. This can be confusing as in SNP testing a statistical match indicates a relationship, but within STR testing, there have to be a set of matches that - when calculated together -- are too rare within the population to be random and cannot be excluded from being the person.

Match (in SNP testing, for the meaning of the term when used in CODIS testing, see above): a test taker who shares a statistical portion of DNA with another test taker. In autosomal DNA testing, that portion could be as high as 50% (about 3,200 centiMorgans, *i.e.*, parent to child, or sibling to sibling), or as low as 0.02% (7 centiMorgans, *i.e.*, very distant cousins). The DNA shared could be within the full 23 chromosome pairs, and/or in the Y chromosome, and/or the X chromosome, and/or in mitochondrial genetic material, depending on which tests are being compared.

<sup>38</sup> "Our History," *MyHeritage*, timeline; <https://www.myheritage.com/about-myheritage/>.



on DNA evidence to its forensic genealogy courseware. All students had to pass with a B or higher to achieve the certificate of completion.<sup>39</sup>

## 2018

The Board for Certification of Genealogists updated *Genealogy Standards* to include best practice guidance for the use of DNA for genealogy.

On 18 May, William Earl Talbott II was arrested by Snohomish County, Washington, sheriffs for the murder of Tanya Van Cuylenborg.<sup>40</sup>

24 April, Joseph James DeAngelo was arrested for crimes committed by the “Golden State Killer” due to research conducted by Barbara Rae-Venter, JD, PhD, and her team which identified any sons of Joseph’s parents as possible exemplars of the sample provided by law enforcement. CODIS testing found an exact match among the sons, proving the work of Dr. Rae-Venter and her team to be accurate.<sup>41</sup>

In November, law enforcement entities around the world learned about genealogical research’s value for identifying DNA samples beyond the confines of CODIS.<sup>42</sup>

## 2019

In April GEDmatch changed its Terms of Service to require that users opt-in for law enforcement access to kits.<sup>43</sup>

In June, in a precedent-setting (first of its kind) case, Snohomish County jury found William Earl Talbott II guilty of two counts (Cook and Cuylenborg) of first-degree murder in 1987.<sup>44</sup>

Ancestry, Helix, and 23andme launched the Coalition for Genetic Data Protection.<sup>45</sup> (As of October 2023, Individual users of these three database services are still not given the choice to opt-in to law enforcement access.)

December, GEDmatch was acquired by Verogen.<sup>46</sup>

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<sup>39</sup> Melinde Lutz Byrne, program director, to Ruth Ann Murray, director, Boston University, Center For Professional Education, Fall Semester, 2017 personal communications held by Byrne, who developed the module.

<sup>40</sup> Karin Larsen, “DNA genealogy match leads to arrest in 1987 slayings of B.C. high school sweethearts,” *CBC News*, broadcast 18 May 2018, as cited in *Wikipedia*.

<sup>41</sup> Barbara Rae-Venter, *I Know Who You Are: How and Amateur DNA Sleuth Unmasked the Golden State Killer and Changed Crime Fighting Forever* (New York: Ballentine Books: 2023).

<sup>42</sup> Melinde Lutz Byrne, “When CODIS Fails Forensic Genealogy May Succeed,” FBI CODIS conference, Norman, Oklahoma, November 2018.

<sup>43</sup> Natalie Ram, “The Genealogy Site That Helped Catch the Golden State Killer Is Grappling with Privacy,” *Slate.com*, posted 29 May 2019; <https://slate.com/technology/2019/05/gedmatch-dna-privacy-update-law-enforcement-genetic-genealogy-searches.html>.

<sup>44</sup> Caleb Hutton, “Man guilty of 1987 murders solved with genetic genealogy,” *HeraldNet*, published 28 June 2019, as cited in *Wikipedia*, viewed 5 September 2023.

<sup>45</sup> Alex Gangitano, “DNA testing companies launch new privacy coalition,” *The Hill*, posted June 25, 2019; <https://thehill.com/regulation/lobbying/450124-dna-testing-companies-launch-new-privacy-coalition/>.

<sup>46</sup> VEROGEN press release, “GEDmatch Partners with Genomics Firm,” posted 19 December 2019; <https://verogen.com/gedmatch-partners-with-genomics-firm/>.

## 2020

By December Verogen introduced a sister site, GEDmatch PRO, for law enforcement only.<sup>47</sup>

## 2021

January, Australian company MyDNA, Ltd., purchased Gene By Gene, parent company of FTDNA.<sup>48</sup>

December, William Earl Talbott II's guilty verdict was overturned by Washington appellate court citing juror bias. No challenge made to the use of forensic genealogy.<sup>49</sup>

## 2022

In December, the National Conference of State Legislatures reported on the status of DNA testing legislation in each of the 50 states as of 2018.<sup>50</sup>

In December, Washington State Supreme Court reinstated the two guilty verdicts in William Earl Talbott II 1987 double murders, citing defense's failure to dismiss the juror. No challenge made to the use of forensic genealogy.<sup>51</sup>

## 2023

January, Qiagen (based in Europe) completed purchase of Verogen and strengthened EU-style personal protections.<sup>52</sup>

In May, the Board for Certification of Genealogists approved development of the Certified Genetic Genealogist credential.

## 2024

On March 1, 2024, The Board for Certification of Genealogists began accepting applications from Certified Genealogists for the advanced Certified Genetic Genealogist credential.

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<sup>47</sup> "Terms of Service and Privacy Policy," *GEDmatch.com*; <https://www.gedmatch.com/terms-of-service-privacy-policy-may-31-2023/>.

<sup>48</sup> MyDNA press release, "Pharmacogenetic and genealogy pioneers merge for historic partnership," posted 7 January 2021; <https://www.prnewswire.com/news-releases/pharmacogenetic-and-genealogy-pioneers-merge-for-historic-partnership-301202798.html>.

<sup>49</sup> AP, "Citing Juror Bias, Washington Appeals Court Overturns Conviction of Man Linked by DNA to Slaying of Young Couple," posted 7 December 2021; <https://lawandcrime.com/crime/citing-juror-bias-washington-appeals-court-overturns-conviction-of-man-linked-by-dna-to-slaying-of-young-couple/>.

<sup>50</sup> National Conference of State Legislatures, "DNA Arrestee Laws," posted December 17, 2022 but covering laws as of 2018, pdf download available at [https://web.archive.org/web/20221217221316/https://www.ncsl.org/Documents/cj/Arrestee\\_DNA\\_Laws.pdf](https://web.archive.org/web/20221217221316/https://www.ncsl.org/Documents/cj/Arrestee_DNA_Laws.pdf).

<sup>51</sup> AP, "Court reinstates guilty verdicts in 1987 killings of couple," *FOX 28 Spokane*, broadcast 23 December 2022, as cited in *Wikipedia*, viewed 5 September 2023.

<sup>52</sup> QIAGEN press release, "QIAGEN completes acquisition of Verogen, strengthening leadership in Human ID / Forensics with NGS technologies," posted 9 January 2023, <https://corporate.qiagen.com/English/newsroom/press-releases/press-release-details/2023/QIAGEN-Completes-Acquisition-of-Verogen-Strengthening-Leadership-in-Human-ID--Forensics-With-NGS-Technologies/>.