Procedure for CODIS – Familial Searching
Forensic Biology Section
Issued by Forensic Biology Forensic Scientist Manager and
DNA Technical Leader

Version 1
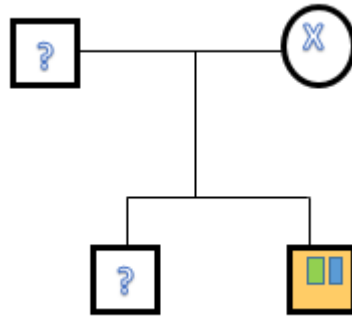Effective Date: 11/25/2019

Procedure for CODIS – Familial Searching

1.0 **Purpose** – The purpose of this document is to outline how to conduct a familial search within the CODIS software. The goal of the CODIS system is to provide a means for known DNA profiles to be searched against unknown DNA profiles potentially providing investigative information.

2.0 **Scope** – The procedures in this document apply to familial search related functions performed by the state CODIS Administrator or designee in the Forensic Biology Section of the State Crime Laboratory in Raleigh (NCBCI0094).

3.0 **Definitions -** See Forensic Biology Section CODIS Definitions List

4.0 **Equipment, Materials, and Reagents** –CODIS Software Version 8.0 (or later), external media storage device, Forensic Advantage (FA) system, SpecMan

5.0 **Procedure**

    5.1 **Case Eligibility**

        5.1.1 Familial Searches will only be conducted in cases where an approval has been granted based on the Forensic Biology Section Procedure for Familial Search Requests.

    5.2 **Building a Pedigree Tree**

        5.2.1 A pedigree tree in Pedigree Manager must be created for each specimen that undergoes a familial search.

        5.2.2 Select "Add Pedigree" and enter Pedigree Tree ID. The Pedigree Tree ID will be the same as the Specimen ID. Select "Familial Search" as the Pedigree Category.

        5.2.3 Select the box in the pedigree tree and right click to "Add Relationship > Parents." Repeat again to add "Brother".

        5.2.4 Right click on the box representing the Father and select "Set Node to Unknown." Confirm that the box representing the Brother is already set to unknown.

        5.2.5 Select the box representing the target of the search and right click to "Associate the Specimen." This links the DNA Specimen ID with the Pedigree Tree ID. Click "Save."

        5.2.6 The pedigree tree in CODIS should resemble the example below:

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5.3 Searching the Pedigree Tree

5.3.1 Select the "Pedigree Search" view in Searcher. Type in the Pedigree Tree ID and click on "Retrieve."

5.3.2 Review the Search Configuration:

5.3.2.1 Ensure that the CPLR threshold is set to 500.

5.3.2.2 Ensure that STR is checked and that 13 loci are required to return a match.

5.3.2.3 Ensure that Arrestee & Offender is selected for the Indices to Search.

5.3.2.4 Maximum Number of Candidates returned:

- Node 1 search = 61
- Node 2 search = 25

5.3.3 A Node 1 and a Node 2 search will be conducted for each Pedigree Tree.

5.3.3.1 Select "Node 1" and click "Search." Save all ranks once search is completed.

5.3.3.2 Select "Node 2" and click "Search." Save all ranks once search is completed.

5.4 Review Ranks in Rank Manager

5.4.1 All Candidate Ranks from a Familial Search must be saved and retained in Rank Manager.

5.4.2 All Candidate Ranks shall be temporarily dispositioned as "Waiting for

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More Data."

5.4.3 Export the Rank Inventory Report as an Excel document so that the Candidate Ranks can be evaluated. The Excel document will be shared with the DNA Database Section.

5.5 **Evaluation of Candidate Rank Specimens**

5.5.1 Candidate Rank specimens that do not contain the expanded 20 core loci must be re-analyzed by the DNA Database Section. The resulting specimen information will be updated in CODIS. The candidate ranks shall be re-evaluated to determine if the CPLR threshold is still met.

5.5.2 Male rank candidates that still meet the CPLR threshold will then be analyzed for YSTR loci by the DNA Database Section. A keyboard search of the evidentiary YSTR profile shall be conducted by the DNA Database Section. The results of the search shall be evaluated by the state CODIS Administrator or designee.

5.6 **Request for DNA Database Confirmation**

5.6.1 Male candidates with a concordant YSTR profile to the evidentiary sample will move forward with the DNA Database confirmation process.

5.6.2 Female Candidate Ranks associated with a Node 2 (Parent-Offspring) search that meet the CPLR threshold will move forward with the DNA Database confirmation process.

5.7 **Final Rank Disposition and Determination of Notification**

5.7.1 Any Candidate Rank that no longer meets the CPLR threshold after being updated with the expanded 20 core loci must be dispositioned as "No Match."

5.7.2 Female Candidate Ranks associated with a Node 1 (sibling) search shall not be reported out. These ranks must be dispositioned as "Insufficient Data."

5.7.3 Any male candidates where the Y-STR profile is not concordant with the forensic specimen shall be dispositioned as a "No Match" and shall not be reported out.

5.7.4 Any confirmed male candidates shall be dispositioned as a "Requesting More References" and will be reported out.

5.7.5 Any confirmed female candidates from a Node 2 search that meets the CPLR threshold will be dispositioned as "Requesting More References" and will be reported out.

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5.7.6   Only the personally identifiable information relating to a rank with the disposition of "Requesting More References" shall be released.

5.8 Reporting of Familial Search Results

5.8.1   <u>**Negative Search:**</u> "As requested by your agency, the North Carolina State Crime Laboratory has conducted a Familial Search of the North Carolina State DNA Database for potential first-degree relatives (parent/offspring/full sibling) of the source of this DNA profile using STR-based kinship analysis and Y-STR comparisons. This search did not identify any potential relatives in the North Carolina State DNA Database. This result does not preclude the possibility that such a biological relative may exist in the Database; however, identification of that relative through the existing methodology was not possible. Alternatively, the result may indicate that no such relatives exist in the Database. A repeated Familial Search of the same evidence profile may be conducted, upon approved written request, no sooner than 12 months from the date of this report.

If you need further information regarding this Familial Search result, please do not hesitate to contact Forensic Scientist (name of) or the Casework CODIS Administrator at (XXX-XXX-XXXX)."

5.8.2   <u>**Positive Search:**</u> "As requested by your agency, the North Carolina State Crime Laboratory has conducted a Familial Search of the North Carolina State DNA Database for potential first-degree relatives (parent/offspring/full sibling) of the source of this DNA profile using STR-based kinship analysis and/or Y-STR comparisons. This search identified the following possible relative in the North Carolina State DNA Database:

Name:
SSN:
DOB:
FBI:
SID:

This information is provided only as an investigative lead, to which the following information must be understood and applied in the process of further investigation:

- The named individual is **NOT** the source of the forensic unknown DNA profile obtained from _____ (Item).
- The DNA results provide an indirect association, based on potential genetic relationships, rather than a direct match between the source of the forensic unknown profile and the named individual.

- This search result only indicates the likelihood of a biological relationship; it does not confirm that the named individual is biologically related to the source of the forensic unknown profile.
- While the DNA results are best explained by a parent-child or full sibling relationship, other familial relationships could also explain these results.
- Other paternally related individuals to a named male individual, and/or of the source of the forensic unknown profile, are expected to have the same Y-STR haplotype.
- At this time, female candidate specimens cannot be tested with a secondary technology, such as Y-STRs, to further support the familial relationship between the offender and forensic specimen.

Analysis in this case is not considered complete until a DNA standard has been obtained from a subject developed during the course of your investigation and submitted for comparison purposes. Only then can an exact DNA match be confirmed or refuted.

If you need further information regarding this Familial Search result, please do not hesitate to contact Forensic Scientist (name of) or the Casework CODIS Administrator at (XXX-XXX-XXXX)."

6.0 Limitations - See Procedure for Familial Search Requests

7.0 Safety – N/A

8.0 References

8.1 FBI's Familial Searching Manual for CODIS 8.0 (Version 1.0, July 2018)

8.2 Forensic Biology Section Definition List

8.3 Forensic Biology Section CODIS Definition List

8.4 Forensic Biology Section Form – Familial Search Request and Evaluation

8.5 Forensic Biology Section Procedure for CODIS – DNA Casework

8.6 Forensic Biology Section Procedure for Familial Search Requests

9.0 Records – N/A

10.0 Attachments – N/A

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Revision History		
Effective Date	Version Number	Reason
11/25/2019	1	Original Document

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