DNA Database Stain Room Procedures

Note: If interns are working in the stain room then two interns are to be present in the stain room at all times or have a trained analyst providing supervision when receiving samples, staining, and entering data.

1 DNA Database Blood Samples

1.1 Pick up samples from the Evidence Control Unit at approximately 11:30 a.m. and 4:30 p.m., when possible.

1.2 Place blood samples along with inventory chain-of-custody sheet(s), if sheets are separate, on right side shelf of the double door refrigerator until ready to stain.

2 Aseptic Techniques and Contamination Control

2.1 Wear protective nitrile gloves (or equivalent) AT ALL TIMES while handling anything in the stain room. The stain room is considered "dirty" and precautions must be taken to avoid sample contamination, personal injury, or infection. Gloves must be worn while handling samples, staining, and while entering data on the computer in the stain room. The telephone is the only "clean" equipment that should be handled without gloves.

2.2 White bench top K-Dry paper should be changed at a minimum daily **and at the discretion of the individual when paper becomes dirty.**

2.3 All shelves, bench tops, the sink area, the refrigerator, door handles, and the keyboard should be wiped down with a disinfectant daily, and at the discretion of the individual preparing bloodstains in order to maintain a sterile work environment.

2.4 The Biosafety hood should be thoroughly cleaned with a disinfectant before and after every use

2.5 The biohazard bag within the biohazard container under the safety hood should be changed after every use to avoid over-filling or splattering of blood as persons

dispose of blood tubes.

2.6 Biohazard bags should be sealed with tape prior to disposal in the biohazard waste container.

3 DNA Database Blood Staining

3.1 Remove samples from Stain Room refrigerator and place them on the bench top opposite the computer.

3.2 Using a disinfectant solution, wipe down the roll cart shelves and pull the cart to the right side of the same bench.

NOTE: Have a Database Analyst or Manager sign and date the inventory form in the "received by" area at the bottom of the inventory form.(This is VERY Important!)

3.3 Check to see that all offenders' names that appear on the SBI DNA Inventory Form have a collection card and blood sample in the package. If all samples are found to be correct, initial and date the upper right-hand corner of the inventory form and place the form face down on the top shelf of the black metal organizer. Open one plastic packaged collection card pouch at a time with all other pouches pushed to one side and out of the way.

3.4 Remove the card and blood tube from the package. Inspect both the card and the blood tube to ensure that the proper information is included and that the card is filled out correctly.

NOTE: Inspect the blood tube and verify that the offender's name is written on the tube.

3.5 If the information supplied on the card is correct and thumb prints are acceptable, initial and date the left side of the card in the section containing the thumb prints. Be careful not to write on the prints.

NOTE: **If there are no thumb prints on the card or the offender's name does not appear directly on the blood tube, the blood tube and collection card must be removed as a "misfit"sample and documented accordingly.**

3.6 Using the electronic stapler, attach one S&S stain card to the back of the collection card in the area previously initialed and dated (back of area where thumb prints are located).

3.7 Fold the collection card (if not already done), into thirds with the thumb print and stain card third folded to the inside with the front, name, and information side, over the top on the outside.

3.8 Take a small FTA Gene Card and write the offender's date of birth on the top of the card above the staining area .

3.9 Place the FTA Gene Card and vial of blood inside the fold of the DNA Collection card and place on the roll cart.

3.10 Repeat this process until all samples have been processed. Complete one institution's samples at a time before moving to the next. For local jail collection cards, be sure to fill out the appropriate information in the blue notebook labeled "Local Jail Submission Record."

3.11 When all collection cards have been properly processed and placed on the cart, roll the cart to the right side of the Biosafety Hood.

3.12 Using disinfectant, wipe the area beneath the hood and check to see that all necessary supplies are available and stocked. Turn both the light and the blower on to minimize contamination.

3.13 Each of the two interns will now work side by side under the Biosafety Hood. One intern will remove the DNA collection card, blood tube, and FTA Gene Card from the roll cart and will verify that the name, date of birth, and social security number correspond on all three items. The same intern will then place his/her initials and the other intern's initials on the S&S stain card along with the DATE OF BIRTH of the offender in the upper left hand corner of the card.

3.14 The intern will then pass the DNA collection card, blood tube, and FTA Gene card to the intern making the stain. At this point, the intern staining the card will AGAIN verify the offender's name, date of birth, and social security number.

3.15 Each collection sample requires two plastic weigh boats. Place the weigh boats side-by-side. In the weigh boat on the right, place the FTA Gene Card right side up after checking again that the offender's date of birth matches that of the collection card and blood sample about to be used. Unfold the collection card and extend the S&S stain card out away from the collection card. Place the S&S stain card into the left weigh boat, with the information part of the card extending back and away from the weigh boat.

3.16 Gently shake the blood tube (to mix the components that may have settled). Carefully remove the rubber stopper from the blood tube by easing the grooved side of the stopper to the rim of the test tube. **NOTE: Tops are sealed with negative pressure and should be opened carefully to avoid splatter. Open all tubes under the hood, behind the safety glass.**

3.17 Using a clean, plastic disposable pipette, draw the blood from the tube. Gently pinch pipette bulb to release blood onto collection cards. Stain all three circles on the FTA card in the right weigh boat. Using remaining blood, stain approximately three-fourths of the S&S stain card in the left weigh boat. When staining is complete, place pipette inside blood tube and carefully place both in the biohazard waste container. **If it is determined that there is insufficient blood to complete all three circles and have enough to make the stain on the S & S paper then the sample should be rationed so that portions of both cards can be stained.**

3.18 Move completed stain cards to the far left under the Biosafety hood until stains have been completed.

NOTE: **When Biosafety hood space has filled with completed stains remove each SET carefully with FTA stain card boat on top of the BACK of the extended collection card (information side).**

3.19 Place each set, in above manner, on the shelves of the biosafety drying hood unit where they will remain overnight.

4 DNA Database Sample Entry

4.1 After a night of drying, samples are ready to be entered into the DNA Database using the Stain Room computer.

4.2 Remove each sample collection set by placing the FTA Gene Card inside the DNA collection card and folding the collection card. Use a rubber band to secure the two together. Place offenders in the boxes labeled "Offenders Awaiting Database Entry."

4.3 Place boxes containing DNA Collection Cards on bench top by computer. Log into the Microsoft Access Program titled "Specimen Manager" (Interns will be given a temporary login for access).

4.4 Select the button "DNA Specimen Information". Then type in the offender's social security number and push "search". This allows the program to search for duplicate samples. If the offender doesn't have a social security number then use the offender's name to search for duplicate samples. If the program returns a duplicate sample then the most current sample will not be logged into the database. Place it in the box "Duplicate Samples" and add it to the "Duplicate Sample Inventory List".

4.5 If the program doesn't return a duplicate then it will ask " Add Sample to Database". Select "Yes". The Access Program will automatically assign the next bar code number. Check that the number corresponds to the next number after the last one written down on "next bar code number" form. Using the collection card information, type in the correct data in the corresponding fields using the "tab" key to move to the next field. It is important that as many of the field be populated as possible. Also, if there are any discrepancies then the appropriate people need to be notified in order to make corrections.

4.6 When all appropriate information has been completed on the screen and the offense has been entered press apply. Next, click on the bar code button and print two labels.

4.7 Remove the two small bar codes that have only the bars and the offender's last

name. Place one bar code on the FTA Gene Card in the designated place. Place the other bar code on the DNA collection card in the designated place.

4.8 **IMPORTANT:** If the offense written or typed on the DNA collection card does not match one of the offenses listed on the form titled "Offenses Requiring DNA Typing," that particular sample must **NOT** be entered into the DNA Database until confirmation is received that the offender does, in fact, have a conviction of one of the listed offenses.

NOTE: If the offense, G.S. Number, or abbreviated written offense, does not match one of the listed offenses requiring DNA typing, call the submitting agency that sent the collection card and sample and ask to speak with the person whose name appears on the collection card as the one who prepared the card. Identify yourself by name and "Employee of the SBI DNA Database." Ask if they have any record of the offender having been convicted of another offense not listed on the card, that requires DNA testing. If it is found that the offender does NOT have any offense that requires DNA testing, the stained collection card must be documented in the "Log of Misfit Samples" and placed in the box labeled "Misfits" inside the refrigerator. If; however, an offense is found to match one requiring DNA testing, write that offense on the appropriate line on the collection card,(place your initials beside it and the name of the person with whom you spoke on the phone). Then enter the sample information into the DNA Database as normal and keep the sample with the original grouping.

4.9 Once all samples are entered into the Database, collection cards must be packaged using white sealable pouches. The FTA Gene card is placed into a small, white, adhesive sealing pouch, whereas the DNA collection card is placed in a large heat sealing pouch.

4.10 Place the two bar code information stickers on the outside of each of the pouches (small and large). Place the corresponding collection card in matching pouch, again, checking to ensure that each card is placed in the correctly labeled pouch.

4.11 FTA Gene Card pouches are put in the filing cabinet in the main lab and placed in sequential order according to the DNA Database bar code number.

4.12 The large heat sealable pouches which enclose the collection cards are placed in

sequential order in the boxes labeled "Offenders Awaiting Analysis" in the stain room refrigerator until enough have been collected to heat seal a bundle.

5 Heat Sealing

5.1 When the samples have been properly entered into the DNA Database and placed in the correct pouches, the larger pouches are heat sealed (to better preserve the blood sample).

5.2 Prior to sealing, each pouch must receive a desiccant (silica gel absorbent pouch) which eliminates moisture within the pouch. Desiccants are located in the two drawers directly below the heat sealer. Place a desiccant in front of or behind the folded collection card. Do not place the desiccant inside of the card. The desiccant should not directly touch the blood stained S&S card. **Desiccants should be alternated in location within each envelope so that the envelopes stack easier and the appropriate number fit inside the storage boxes.**

5.3 With collection card pushed as far down in pouch as possible, heat sealing can begin. Press the power (on/off) button on the heat sealing machine. The pressure, gas, and heat controls are preset so typically no adjustment will need to be made.

NOTE: Place four pouches in sequential order on the left side bar of the machine and four more on the right side bar of the machine with the open ends of the pouches lying on the heat sealing bars. When eight sequentially numbered pouches are placed in the machine, pull the top down using the metal handle in the front Hold the handle down firmly until the pressure begins building within the machine. After a few moments, the pressure will be released from the machine, and the lid will raise automatically. Remove the pouches and again place them in sequential order.

5.4 After sealing, 25 sequentially ordered pouches are bundled using a rubber band and the group is put in the appropriate container in the walk-in freezer (containers are identified by year and database number). **Each box should contain 500 specimens.**

6 FTA Cards

The small FTA Genecards shall be placed in sequential order in the tan filing cabinet in the extraction lab.

Revision History		
Effective Date	Revision Number	Reason
	00	Original Document
11/22/02	01	1) Update Procedure using WP Outline 2) Change "amphyl" to "disinfectant" 3) Minor changes for clarification, no substantiative changes made in procedure.