

Scientific Working Group on DNA Analysis Methods (SWGDM) January 2020 Report

January 7 - 9, 2020

Woodbridge, Virginia

I. Agenda:

Please see Attachment 1.

II. Meeting Synopsis:

Tuesday, January 7, 2020

The SWGDAM Chair, Anthony Onorato, opened the meeting and welcomed the new members and invited guests. The Chair congratulated SWGDAM Executive Board member John Tonkyn who recently accepted a position at the International Commission of Missing Persons and thus he was resigning from SWGDAM. The Chair introduced Bob Gemme of the FBI's CODIS Unit and explained that the CODIS Unit would be assisting in the travel and administrative tasks following Kate Henze's departure to another position. On another administrative matter, the Chair explained that, approximately every 5 years SWGDAM members and invited guests are requested to acknowledge the SWGDAM Ethical and Conflict of Interest Principles and that the forms had been distributed for that and would be collected throughout the meeting.

Morning Technical Session: Rapid DNA

Richard Wilson, Chief of the CODIS Unit, provided an update on the Rapid DNA pilot and participating states (Arizona, California, Florida, Louisiana and Texas). Mr. Wilson announced that Dr. Douglas Hares is now the Rapid DNA Implementation Advisor and that Lisa Grossweiler is the NDIS Custodian. Mr. Wilson detailed that the Rapid DNA Committee has been reviewing the Pilot Law Enforcement (Booking Station) Standards to incorporate lessons learned and that a revised version would be provided to the attendees for review and comment during Thursday's session.

Douglas Hares provided a high level review of the Pilot Law Enforcement (Booking Station) Standards. Dr. Hares also explained the formation of the FBI's two task groups relating to the advancement of the technology for possible future crime scene DNA analyses using Rapid DNA and the non-CODIS uses of the technology. Dr. Hares

reviewed the Rapid enrollment process, including the search against the DISC-enabled DNA profiles and the subsequent notifications to the investigating agency, booking agency, and the CODIS Laboratory. Dr. Hares noted that there is no Rapid DNA System approved by the FBI for the booking environment at present and one approved system for use in an accredited laboratory (ANDE 6C).

George Li, the Rapid DNA Program Manager, provided an update on the Pilot project which has been extended until February 29, 2020. He described the process as the CODIS Rapid Enrollment (CRE) application to SDIS and generates a search against the DISC-enabled profiles in CODIS and if a hit, it is transmitted to the investigating agency and the booking agency. Mr. Li provided updates on the readiness of each participating State and the successful test transmission by the FBI's Washington Field Office.

Dr. Hares returned to review the Pilot Law Enforcement Standards in more depth and explain the model on which they were based.

Afternoon Technical Session: Investigative Genetic Genealogy

Ann Marie Schubert, the District Attorney of Sacramento County, CA presented on the power of investigative genetic genealogy and the Golden State Killer case. Ms. Schubert provided the background on the Visalia ransacker, the East Area rapist. Linkage of the rapes in Northern Ca with the homicides in Southern CA, 40th Anniversary in 2016 with a new media blitz and reward. Ms. Schubert explained that the idea of using genetic genealogy was proposed at the end of 2017 and on April 24, 2018, Joseph DeAngelo was arrested. Ms. Schubert emphasized that the STR DNA profile is the most important evidence and once a suspect is identified, perform confirmatory analysis with the target DNA profile. Since the identification of Joseph DeAngelo, over 70 additional identifications have been made using genetic genealogy and over 20 of them have been in California. Ms. Schubert explained that they follow a MOU/Policy with privacy considerations in mind and that they have developed a best practices MOU between the law enforcement agency/prosecution/laboratory for investigative genetic genealogy (single source DNA profile, serious violent crime with public safety implications, reasonable leads exhausted, requires confirmation testing, etc.).

Ted Hunt, Chief Science Advisor in the Department of Justice (DOJ) on Forensic Science, provided the background on the development of the DOJ Interim Policy on Forensic Genetic Genealogy which began in the fall of 2018, was approved in September 2019, and took effect November 1, 2019 (www.justice.gov/forensics). Mr. Hunt reviewed the interests addressed in the policy (solve violent crime, privacy, investigative collaboration, etc.) and the case criteria (violent crime or UHR, threat to public safety, other investigative leads pursued, applicable VICAP upload). Mr. Hunt explained that interdisciplinary collaboration was important as the designated laboratory official offers

scientific expertise for potential alternatives depending upon amount of sample available. Mr. Hunt also reviewed legal precedent for the third party doctrine and Fourth Amendment issues.

Following a panel discussion with Ms. Schubert and Mr. Hunt, Thomas Callaghan provided an update on the Committee of Correspondence on Forensic Genealogy and their review of the SWGDAM comments on the Overview Statement. Dr. Callaghan explained the revisions made by the Committee to address the comments, including a change to considerations, a reference to the DOJ Interim Policy and the addition of a consideration on familial searching. Dr. Callaghan explained the role of the designated laboratory official as contemplated in the DOJ Interim Policy. Dr. Callaghan also reviewed the information provided by those laboratories performing SNP testing relating to sample size, mixtures and degraded DNA.

Wednesday, January 8, 2020

The Chair provided his report on the activities of SWGDAM since its July 2019 meeting, including the following updates: DNA Process Mapping meeting in January; the Committee of Correspondence on Forensic Genealogy has completed its taskings and will be reconstituted as a Working Group or Committee; potential topics for the next meeting's Technical Session; and the next SWGDAM Meeting dates: July 7-9, 2020; January 12-14, 2021, and July 13-15, 2021.

Update Session

Walther Parson, at the Institute of Legal Medicine in Innsbruck provided an update on the International Society of Forensic Genetics. Dr. Parson reported on the 28th Congress, ISFG Commissions and FSI Genetics. Dr. Parson provided an update on the following: 29th Congress of the International Society for Forensic Genetics to be held in Washington, D.C. on August 23-28, 2021; STRrider; FSI Reports (new online journal tailored for validation, population studies and other applied studies); and ISFG membership. Dr. Parson described the article entitled "Biparental Inheritance of Mitochondrial DNA in Humans" reporting on the mtDNA inheritance from the mother and father (which were deduced) and his response in a Letter to the Editor that there is no further evidence for paternal leakage of mtDNA in humans yet.

Alexander Kneppers of the Netherlands Forensic Institute provided an update on the European Network of Forensic Science Institutes (ENFSI), a network with 71 members in 38 countries. ENFSI has over 1,000 forensic experts and 17 working groups. The ENFSI Strategic Plan includes the development of best practice guidelines, the establishment and sharing of forensic databases, and the establishment of new proficiency tests and collaborative exercises. Dr. Kneppers provided an update on the interaction

between the LEWP, CEPOL, Europol and ENFSI; training; Monopoly 2016 STEFA; and Monopoly 2018 AFORE on accreditation. The ENFSI DNA Working Group, chaired by Dr. Kneppers, consists of 75 laboratories and has 4 task forces working on various projects relating to best practices, workflows on processing DNA, training, quality assurance and validation. Dr. Kneppers also described DNAXs, a DNA eXpert System developed by the Netherlands Forensic Institute which has been in use since 2017 with subsequent versions available to laboratories in the ENFSI network.

Following the updates, the Committees and Working Groups held breakout sessions.

Wednesday Evening Round Table

A round table discussion was held in the evening and the following topics were presented and/or discussed: Next Generation Sequencing of Djehutynakht; ransomware; STRmix admissibility hearings; match confirmations; research on brass cartridge cases; LSJML research projects; and DNA legislative proposals.

Thursday, January 9, 2020

Technical Session

Following an independent review period, Brian Harmon with the Rapid DNA Committee reviewed revisions to the Draft Standards for the Operation of Rapid DNA Systems by Law Enforcement Agencies in the Booking Environment. Mr. Harmon moderated a review of the document by section and then by page to obtain the attendees comments and/or suggestions.

Melissa Taylor of the National Institute of Standards and Technology provided a brief update on the Process Mapping project. Ms. Taylor noted that data interpretation is next for review and deconvolution and comparison are outstanding items. Ms. Taylor reminded the attendees that the focus is on mapping what is being done and not determining what is right or wrong.

Afternoon Session

The Committees provided an update on their activities, accomplishments, pending issues and plans.

Update Session

Carl Sobieralski of the Indiana State Police provided an update on the Biology Scientific Area Committee (SAC). Mr. Sobieralski reviewed the approved documents, documents

currently being worked on, documents up for comments, documents going through the registry process, etc. Mr. Sobieralski noted that they may also issue technical publications and in that regard, their group is looking at other disciplines and how they report. He stated that there was a Board determination that there was a gap in testimony and so they are now working on standards for testimony. Mr. Sobieralski noted that if a laboratory voluntarily adopts one of the standards, then the laboratory will be held to that standard for purposes of accreditation. He reviewed the top priorities for the Biology SAC, including analyzing process maps for gaps in standards, working to move documents through the standard development process, and working closely with SWGDAM on joint interests.

Dawn Herkenham, with ECS provided a Legislative Update. Ms. Herkenham reviewed federal and state legislation including DNA-related grant funding included in the FFY 2020 enacted Consolidated Appropriations Act, state expansion legislation and federal/state pending legislation. Ms. Herkenham also reviewed the status of arrestee DNA legislation and cases; an appellate decision relating to the FBI's determination of specimen eligibility for NDIS (*Cowels & Mims v. FBI, et al.*); probabilistic genotyping cases; and sexual assault kit evidence cases.

Andrea Borchardt of the National Institute of Justice Office of Investigative and Forensic Sciences provided an update on NIJ activities. Ms. Borchardt reviewed the following: Needs Assessment of Forensic Laboratories and Medical Examiner/Coroner Offices released in December 2019; National Best Practices for DNA Laboratory Efficiency Improvement planned publication for late 2020; Capacity Enhancement for Backlog Reduction (including the GAO Report, eligibility requirement for CEBR grants resulting from H.R. 777, funding and performance measures); Research and Evaluation of Physical Evidence in Publicly Funded Labs; NIJ Forensic Science R & D program; Forensic Biology TWG 2019 highlighted needs; Best Practices in Evidence Management, a project in conjunction with NIST; Human Factors for DNA Testing and Interpretation Working Group (from sampling to evidence testing); and the National Center on Forensics (new initiative).

Peter Vallone, Leader of the National Institute of Standards and Technology Applied Genetics Group provided an update on their activities. Dr. Vallone described the status of the following: SRMs including the SRM 2391 series which will continue to support the FBI QAS; d XSTRs and SRM 2372a, the Human DNA Quantification Standard; Sequencing Projects on the MiSeq FGx and S5 platforms; plans to publish population studies reporting additional data for YSTR, XSTR and SNP data and frequencies; an article on understanding the behavior of stutter through the sequencing of STR alleles will be published in *FSI: Genetics*; Mitochondrial Genome Sequencing population scale project in collaboration with AFMES-AFDIL; EDNAP Collaborative mtDNA

Heteroplasmy Study with Walther Parson's laboratory; Update on STRBase; Results of the 2018 Rapid DNA Maturity Assessment in The Journal of Forensic Science; NIST Training data to be made available for learning/training purposes; SWGDAM no-Quant Survey; and upcoming meeting presentations.

III. Attendees:

Please see Attachment 2.

IV. Next Meeting:

The next meeting will be held July 7 - 9, 2020.

Attachment 1 - Final Agenda



SCIENTIFIC WORKING GROUP

DNA ANALYSIS METHODS

SWGDM REGULAR MEETING

January 7 - 9, 2020

AGENDA

Monday, January 6, 2020

SPECIAL COMMITTEE SESSIONS

9:00 AM – 5:00 PM Casework Expert System Working Group
Committee of Correspondence on Forensic Genealogy
Rapid-DNA Committee

Tuesday, January 7, 2020

8:30 AM Welcome – SWGDAM Chair

TECHNICAL SESSION: RAPID-DNA TECHNOLOGY

9:00 AM TBD – Rapid-DNA Committee
12:00 PM LUNCH

TECHNICAL SESSION: INVESTIGATIVE GENETIC GENEALOGY

1:30 PM TBD – Committee of Correspondence on Forensic Genealogy
5:00 PM ADJOURNMENT
6:00 PM Executive Board Meeting



SCIENTIFIC WORKING GROUP

DNA ANALYSIS METHODS

Wednesday, January 8, 2020

8:30 AM SWGDAM Chair Report – SWGDAM Chair

COMMITTEE BREAKOUT SESSIONS

10:00 AM Committee Break-Out Sessions

12:00 PM LUNCH

1:30 PM Committee Break-Out Sessions

5:00 PM ADJOURNMENT

ROUND TABLE SESSIONS

6:00 – 9:00 PM Moderator: Russell Vossbrink, SWGDAM Vice Chair

Thursday, January 9, 2020

SPECIAL COMMITTEE SESSION

8:30 AM – 4:45 PM Body Fluid Identification Working Group

UPDATE SESSIONS

8:30 AM Update Session: ISFG – Walther Parsons

9:15 AM Update Session: ENFSI – Sander Kneppers

10:00 AM Break



SCIENTIFIC WORKING GROUP

DNA ANALYSIS METHODS

COMMITTEE OF THE WHOLE SESSION: RAPID-DNA COMMITTEE

10:15 AM Final report on the proposed *FBI Quality Assurance Standards for the Operation of Rapid DNA Systems by Law Enforcement Agencies in the Booking Environment* – Rapid-DNA Committee

12:00 PM LUNCH

UPDATE SESSIONS

1:30 PM Update Session: Biology/DNA SAC – TBD

2:30 PM Legislative Update – Dawn Herkenham

3:00 PM BREAK

3:15 PM NIJ – Andrea Borchardt

4:00 PM NIST – Pete Vallone

4:45 PM Closing Remarks – SWGDAM Chair

5:00 PM ADJOURNMENT

Attachment 2 - Attendees

**SWGDM January 2020 Meeting
January 7 - 9, 2020
Attendees**

SWGDM Chair
Anthony Onorato

SWGDM Executive Board

Chris Carney
Eugene Lien
Amy McGuckian
Shawn Montpetit
Russell Vossbrink
Dawn Herkenham

SWGDM Attendees

Jack Ballantyne
Suzanne Barritt-Ross
Todd Bille
Andrea Borchardt
Thomas Callaghan
Jocelyn Carlson
Amber Carr
Dorothy Catella
Charles Choi
Michael Coble
James Corcoran
Brenda Danosky
Tina Delgado
Seth Faith
Neil Fernandopulle
Russell Gettig
Katherine Butler Gettings
Ann Marie Gross
Lisa Grossweiler
Jessica Hanna
Douglas Hares
Brian Harmon
Bruce Heidebrecht
Bill Hudlow
Deedra Hughes
Ted Hunt

Jodi Irwin
Jessica James
Elizabeth Johnson
Kristy Kadash
Marla Kaplan
Susannah Kehl
Sander Kneppers
Jason Kokoszka
Brandon Letts
George Li
Lauren Lu
Beth Ann Marne
Charla Marshall
Justin Maxwell
Barbara McCarty
Gary Molina
Ruth Montgomery
Lilly Moreno
Ashley Murray
Vanessa Nelson
Mary Lou Nicholson
Sarah Noël
Jeff Nye
Darrel Oubre
Walther Parson
Dixie Peters
John Planz
Evelyn Ridgley
Juliet Rolando
Erica Romsos
Alyson Saadi
Kristin Sasinouski
Lisa Schiermeier-Wood
Taylor Scott
Phillip Simmer
Christie Smith
Jenifer Smith
Mark Smith
Michael Smith
Carl Sobieralski
Melissa Suddeth
Joel Sutton

Peter Vallone
Jeanette Wallin
Susan Welti
Ray Wickenheiser
Richard Wilson