

Scientific Working Group on DNA Analysis Methods (SWGDM) January 2021 Report

January 12 – 14, 2021

Virtual Meeting

I. Agenda:

Please see Attachment 1.

II. Meeting Synopsis:

Tuesday, January 12, 2021

The SWGDAM Chair, Anthony Onorato, introduced Ms. Tiffany Thoren from the Federal Bureau of Investigation' (FBI) CODIS Unit to explain the logistics of the virtual meeting and expressed appreciation to Ms. Thoren and Ms. Gina Sola for their assistance with the virtual meeting.

The Chair introduced Dr. Walter Gilbert recipient of the 1980 Nobel Prize for Chemistry with Frederick Sanger and Paul Berg for their pioneering work in determining the sequence of nucleotides in a nucleic acid. The SWGDAM community was honored to hear from Dr. Gilbert on his life and DNA sequencing. Dr. Gilbert explained that following his graduate studies, he became a Professor at Harvard, working on how proteins were made, and their repressors. In 1970, they began DNA sequencing when the genetic code was beginning to be deciphered; sequencing was impossible at that time. They isolated a DNA fragment and found a DNA sequence that they worked on for two years to 24 bases; it took them about 1 base a month in the early '70s. Later, Dr. Gilbert's research on DNA fragments separate by size would lead to the development of a sequencing method for which he received the 1980 Nobel Prize in Chemistry by breaking down DNA into fragments by chemical techniques. By 1985, eight million bases had been sequenced by the two methods. The rate of DNA sequencing has increased exponentially, doubling every 18 months. He has founded and/or been a Director of many genetic companies (Biogen, Myriad, Paratek, and Amylyx) and currently creates photographic art.

Lucas Zarwell, Director of the Office of Investigative and Forensic Sciences within the National Institute of Justice (NIJ) provided an update on NIJ activities. Mr. Zarwell explained that many of the grant programs have been moved to the Bureau of Justice

Assistance but that NIJ remains the lead Federal agency for forensic science research and development. He described the new solicitation for Crime Laboratory Systems and Processes which opened in December and will close in March 2021. Mr. Zarwell provided updates on the Forensic Science Research and Development grant program; recent DNA awards; NIJ Graduate Research Fellowships; NamUs; DOJ Needs Assessment of Forensic Laboratories; the Forensic Technology Center of Excellence, including the newsletter, webinars and workshop series; and online resources.

The Chair reviewed remarks in honor of Ted Staples, former SWGDAM Chair (1962-2020).

Melissa Taylor with the National Institute of Standards and Technology updated SWGDAM on the progress of the NIST OSAC/SWGDAM DNA Process Map. Ms. Taylor explained that it is important to map the process so it shows how the process could be improved as well as improving communication and assisting the community to shift from focusing on who made an error to what allowed the error to occur. Once the process map is completed, Ms. Taylor noted that other aspects, such as standards, data, research, technology, training, etc. can be addressed. Ms. Taylor described the next steps including forwarding the completed process map to SWGDAM for written comments, then OSAC for written review, the adjudication of comments received and then resubmission to OSAC. Ms. Taylor picked up the review with Extraction and took SWGDAM through the outstanding issues/questions.

Wednesday, January 13, 2021

Committees and Working Groups held scheduled meetings.

The Round Table held in the afternoon/evening covered the following topics: probabilistic genotyping software validation; STR kits; setting up a laboratory to do student testing within 60 days; tackling the number of contributors; dynamics of DNA transfer; and development and support for missing person programs (outsourcing partnerships). Additionally, SWGDAM was honored to hear a presentation from Dr. Rita Freed, Chair of the Art of Ancient Egypt, Nubia and the Near East at the Museum of Fine Arts (Boston), on Djehutynakht.

Thursday, January 14, 2021

The Chair reviewed the agenda for Thursday's session.

Andrea Borchardt with the Bureau of Justice Assistance (BJA) reviewed the forensic suite of programs now at BJA (including those existing at BJA and those transferred over by NIJ). Ms. Borchardt explained the status of the transfer of the NIJ programs and staffing support. BJA has a Programs Office for the formula programs and to administer day to day grant activities; the Policy Office works on competitive programs and provides SME expertise. The grant solicitations have changed the start date from January to October and removed background text to streamline solicitations. Ms. Borchardt provided updates on the following grant programs: Prosecuting Cold Cases; SAFE-ITR; Coverdell (Competitive); Coverdell (Formula); Post Conviction DNA Testing of Evidence; Strengthen Medical Examiner/Coroner Systems; Capacity Enhancement (CEBR); and SAKI.

Juliet Rolando with the FBI Laboratory's Casework DNA Analysis Unit provided an update on the DEI Working Group on Laboratory Management and Operations. Ms. Rolando explained that the group has been meeting since 2019 and is a joint NIJ/SWGDM partnership to develop a best practices document for increased laboratory capacity with a target audience of high-level laboratory officials. The following Subcommittees reported on their recommendations:

Laboratory Operations, J. Rolando.

Case Intake Cycle, D. Oubre.

Training and Hiring, A. Carr.

Data Management, Analysis and Reporting, T. Moretti.

IT, LIMS and Automation, T. Moretti.

Best Practices for New Technologies, L. Moreno.

The Chair introduced Dixie Peter, Chair of the SWGDAM Lineage Marker Committee for a discussion of the SWGDAM Interpretation Guidelines for Y Chromosome STR Typing by Forensic DNA Laboratories and Supplemental Information for Y STR Interpretation Guidelines. Ms. Peters noted that the Guidelines have been revised and she reviewed the following revisions: Y-STR loci; allele designation; additional details in Section 6.1; addition of peak height ratio; addition of minimum number of loci from an evidentiary profile required to perform a comparison to a reference profile; additional details included in Section 8.3 and 8.4; inclusion of YHRD in Section 9.1. The documents will be sent back out for the technical review/comment following the meeting. There was discussion of updating the FAQs in real time and to date each question.

Ms. Lisa Schiermeier-Wood, Chair of the Laboratory Operations Committee reviewed the draft Validation documents and requested feedback on the concepts. Ms. Schiermeier-Wood explained that the purpose of the document is to establish reliable methods for DNA analysis and to identify the limitations of those methods. The Committee decided on a user-friendly overview document that will be supplemented with modules for Rapid DNA, multiplex kits, NGS and probabilistic genotyping where definitions specific to that module will be included.

Ms. Amy McGuckian, Chair of the Casework Expert System Working Group, reviewed the draft SWGDAM Validation Guidelines for the Use of an Expert System with Forensic Samples. There was discussion concerning pre-release of the document before other necessary changes are made, especially to allow laboratories to begin preparing for the challenging samples. There was also discussion of providing information on implementation as the draft document is limited to validation as well as the details on the minimum number of sample types for the validation studies.

The following Committees and Working Groups provided updates: Autosomal STR Committee (Joel Sutton); CODIS Committee (Darrel Oubre); Next Generation Sequencing (Jodi Irwin); Quality Assurance Committee (Jocelyn Carlson); Rapid DNA Committee (Douglas Hares); and the Investigative Genetic Genealogy Working Group (Thomas Callaghan). Please refer to the SWGDAM Committee/Working Group Updates for January 2021 available at the SWGDAM web site (www.swgdam.org) under Committees.

Carl Soberalski, with the Indiana State Police and OSAC representative to SWGDAM, provided an update. OSAC has been organizationally restructured and is instituting a new review process to include individuals not involved in drafting the document. Mr. Soberalski announced three new Standards: DNA Analysis Training Program, Validation Studies of DNA Mixtures and Forensic DNA Interpretation and Comparison Protocols. He encouraged feedback on OSAC documents and works in progress.

Katherine Gettings with the National Institute of Standards and Technology (NIST) provided an update on the following NIST activities: published Sequencing data (NIST PDR); STRAND Working Group; Mitochondrial Genome; Project Aims; YSNP Sequencing Study; supporting efforts for new grants for assessing emerging technologies for body fluid identification and the inter-laboratory variation in the interpretation of DNA mixtures; the Proteos Program; and upcoming presentations.

In his Report, the Chair congratulated three new SWGDAM members (Brenda Danosky, Brian Harmon and Evelyn Ridgley and welcomed two new invited guests (Eric Duvall and Tiffany Vasquez). The Chair congratulated two retiring SWGDAM members, Ruth

Montgomery and John Planz on their retirements and sent best wishes to Kristin Sasinouski on her move to Bode.

The Chair announced the results of the 2021- 2024 SWGDAM Executive Board election: Chris Carney, Ann Gross, Eugene Lien, Gary Molina and Shawn Montpetit.

The Chair noted the next meeting will be held on July 13 – 15, 2021 and would likely also be in a virtual format.

III. Attendees:

Please see Attachment 2.

IV. Next Meeting:

The next meeting will be held July 13-15, 2021.

Attachment 1 - Final Agenda



SCIENTIFIC WORKING GROUP

DNA ANALYSIS METHODS

SWGDM VIRTUAL REGULAR MEETING

January 12 - 14, 2021

FINAL AGENDA

Monday, January 11, 2021

SPECIAL COMMITTEE AND WORKING GROUP MEETINGS

Tuesday, January 12, 2021

1:00 PM – 6:30 PM

PLENARY SESSION

COMMITTEE OF THE WHOLE SESSION

National Institute of Justice Update

Review of the *Joint OSAC/SWGDM DNA Process Mapping Working Group DNA Process Map*

Introduction to the SWGDM *Validation Guidelines for the Use of an expert System with Forensic Samples* - Casework Expert System Working Group

Wednesday, January 13, 2021

COMMITTEE & WORKING GROUP BREAKOUT SESSIONS

Times at Committee and Working Group Discretion

4:00 PM – 7:30 PM

ROUND TABLE SESSION

Moderator: Russell Vossbrink, SWGDM Vice Chair

Chair Anthony J. Onorato

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SWGDM.org



SCIENTIFIC WORKING GROUP

DNA ANALYSIS METHODS

Thursday, January 14, 2021

1:00 PM – 7:15 PM

Bureau of Justice Assistance Update

COMMITTEE OF THE WHOLE REVIEW SESSION

Review of the Recommendations of the Joint NIJ/SWGDM DNA Efficiency Improvement Working Group - Subcommittees

Review of the proposed revisions to the *SWGDM Interpretation Guidelines for Y-Chromosome STR Typing by Forensic DNA Laboratories and Supplemental Information* document– Lineage Marker Committee

Review of the proposed revisions to the *SWGDM Validation Guidelines for DNA Analysis Methods* – Laboratory Operations Committee

Review of the proposed *SWGDM Validation Guidelines for the Use of an Expert System with Forensic Samples* – Casework Expert System Working Group

COMMITTEE/WORKING GROUP UPDATE SESSION

Biology Scientific Area Committee Update

National Institute of Standards and Technology Update

Closing Remarks and Adjournment

Chair Anthony J. Onorato

ajonorato@fbi.gov

SWGDM.org

Attachment 2 - Attendees

**SWGDM January 2021 Meeting
January 12-14, 2021
Attendees**

SWGDM Chair
Anthony Onorato

SWGDM Vice Chair
Russell Vossbrink

SWGDM Executive Secretary
Dawn Herkenham

SWGDM Attendees

Chris Askew
Jack Ballantyne
Suzanne Barritt-Ross
Todd Bille
Andrea Borchardt
Jennifer Breaux
Thomas Callaghan
Jocelyn Carlson
Chris Carney
Amber Carr
Dorothy Catella
Michael Coble
Jerrilyn Conway
James Corcoran
Jennifer Coursey
Brenda Danosky
Eric Duvall
Seth Faith
Neil Fernandopulle
Connie Fisher
Rita Freed
Russell Gettig
Katherine Butler Gettings
Gilbert
Ann Marie Gross
Lisa Grossweiler
Jessica Hanna
Douglas Hares

Brian Harmon
Bruce Heidebrecht
Joseph Hof
Bill Hudlow
Deedra Hughes
Jodi Irwin
Jessica James
Elizabeth Johnson
Kristy Kadash
Marla Kaplan
Susannah Kehl
Ben Knoch
Jason Kokoszka
Brandon Letts
George Li
Eugene Lien
Lauren Lu
Beth Ann Marne
Charla Marshall
Justin Maxwell
Barbara McCarty
Amy McGuckian
Scott McWilliams
Gary Molina
Shawn Montpetit
Lilly Moreno
Tamyra Moretti
Ashley Murray
Steven Myers
Mary Lou Nicholson
Sarah Noël
Jeff Nye
Darrel Oubre
Dixie Peters
Evelyn Ridgley
Juliet Rolando
Erica Romsos
Lisa Schiermeier-Wood
Taylor Scott
Alyssandra Shaffer
Phillip Simmers
Rhalie Simmons

SWGDM January 2021 Report

Christie Smith
Jenifer Smith
Mark Smith
Michael Smith
Carl Sobieralski
Gina Sola
Melissa Suddeth
Joel Sutton
Tiffany Thoren
Melissa Taylor
Peter Vallone
Jeanette Wallin
Susan Welti
Ray Wickenheiser
Richard Wilson
Tiffany Vasquez
Lucas Zarwell
Timothy Zolandz

*Please note that attendance was taken on
1/12/2021 only.