

Scientific Working Group on DNA Analysis Methods (SWGDM) January 2023 Report

January 9 – 12, 2023

Virtual Meeting

I. Agenda:

Please see Attachment 1.

II. Meeting Synopsis:

Monday, January 9, 2023

The SWGDAM Chair, Anthony Onorato, welcomed attendees and introduced Sam Gaul to the SWGDAM as the new Chief Administrative Officer who will be assisting with the meeting.

KEYNOTE SESSION:

The Chair introduced Dr. Carla Dove, a Program Manager in the Department of Feather Labs at the Smithsonian Institution Techniques for Feather Identification at the National Museum of Natural History and recipient of the Lifetime Achievement Award for Feather Identification. Dr. Dove works to identify the birds involved in aircraft incidents in an effort to reduce the risk of bird strikes. Dr. Dove explained that their identifications are to answer questions relating to the legal system and not for law enforcement cases. She described the extensive collections of bird species in their laboratory and that the molecular techniques for identification were implemented in 2003 using mitochondrial DNA. The Institution has a Bar Code of Life that is publicly available. Dr. Dove reported that about 90% of the cases submitted to the lab are identified to the species level using combined methods (morphology and DNA) and about 49% go exclusively to the DNA lab. She presented several examples of the identifications made and then responded to questions from the SWGDAM body.

PARTNER AGENCY UPDATES

Dawn Herkenham, SWGDAM Executive Secretary, provided a Legislative Update that included the Federal Fiscal Year 2023 Appropriations, including DNA grant funding and explanatory statements. She also provided a review of Federal DNA and forensic science

grant appropriations for the last decade. Ms. Herkenham presented legislation enacted in 2022 relating to State DNA databases.

Andrea Borchardt of the Bureau of Justice Assistance reviewed the forensic science programs they administer, including the Forensic Training and Technical Assistance Program, the DNA Capacity Enhancement for Backlog Reduction (known as CEBR) and the CEBR, the Paul Coverdell program, the Sexual Assault Forensic Evidence, Prosecuting Cold Cases and the Strengthening Medical Examiner program. Ms. Borchardt described the recent awards for the Missing and Unidentified Human Remains and CEBR Programs. Specifically with respect to the CEBR Program, Ms. Borchardt noted the addition of a template to assist in streamlining the application process in addition to incentives to address turn-around times and changes to eligibility. Ms. Borchardt provided examples of funding eligibility and recommended their guidance document available at their microsite (<https://bja.ojp.gov/program/dna-cebr/overview>).

Tracey Johnson of the National Institute of Justice (NIJ) provided an update on upcoming symposium and resources for the DNA community. Ms. Johnson noted that there will be an R&D Symposium at the American Academy meeting where updates on awards will be provided. The NIJ National Conference will be resuming in May in Virginia and reviewed the Evidence to Action Solicitations. Ms. Johnson reviewed a number of new reports and tolls: Introduction to Forensic Genetic Genealogy for Forensic Science Providers; Review of Legislation Associated with Lawfully Owed DNA Samples; Cost-Benefit Analysis Tool for Labor Expenditure Associated with Sexual Assault Kit Processing Workflows; Guidance document on considerations for photographic documentation in sexual assault cases; and the coming Landscape Study of NGS Technologies. Ms. Johnson encourages the attendees to subscribe to the FTCoE newsletter for regular updates.

Ray Wickenheiser, Director of the New York State Police Forensic Investigation Center provided an update on the American Society of Crime Laboratory Directors. Dr. Wickenheiser explained that DNA Technical Leaders are eligible for membership. He reviewed the organizations strategic objectives, including cultivating forensic science leaders and promoting quality operations. This is the 50th year anniversary for ASCLD. Their annual meeting will be held in Texas this spring with the theme of resilient leadership. Dr. Wickenheiser reviewed programs, advocacy and communications (e.g., ASCLD Crime Lab Minute, website, e-mail blasts and listening sessions). He provided updates on advancing the science through their work with various Committees and Working Groups; standards and accreditation; Member Resource Committee, Forensic Research Committee; training and education; and position statements.

Katherine Gettings with the National Institute of Standards and Technology provided an update on their programs. New kits with CE and NGS panels are being added for the SRM 2391d (all marker systems and over 11,000 SNPs supported). Updates were provided on the pilot Research Grade Test Material for forensic DNA resource samples, the CE Concordance Studies (VeriFiler™ Plus, PowerPlex® 35GY and 18 E) and Investigator Argus. Ms. Gettings explained the Forensic STR Sequence Nomenclature resource, including its use for databasing (emphasizing length based STR profiles from sequence data for searching and storage as well as its adaptation for current databases).

Carl Sobieralski provided an update on the Biology/DNA Scientific Area Committee. Mr. Sobieralski noted that the Wildlife Biology Committee has a new Chair, Christina Lindquist. He reviewed the ASB Published Standards and OSAC Registry documents. Mr. Sobieralski noted that the Subcommittee has developed an assessment guide and worksheet to determine compliance with DNA interpretation requirements. He requested input on the Human Forensic Biology Survey to assist the OSAC Human Biology Task Group in identifying the most relevant research needs in the forensic biology community and future training needs (survey link available at <https://www.nist.gov/organization-scientific-area-committees-forensic-science/human-forensic-biology-subcommittee>).

The Committee and Working Group Chairs reviewed their meeting plans for the week.

Tuesday and Wednesday, January 10 & 11, 2023
COMMITTEE/WORKING GROUP BREAKOUT SESSIONS

The Committees and Working Groups met for individual meetings.

Thursday, January 12, 2023

The SWGDAM Chair announced the following meeting dates: July 18-20, 2023; January 9-11, 2024; and July 16-18, 2024.

Ray Wickenheiser invited SWGDAM members to apply for two open positions on the OSAC Human Forensic Biology Subcommittee – Vice Chair and Executive Secretary.

Jodi Irwin, Chair of the Next Generation Sequencing (NGS) Committee provided an update on the Committee's activities. The Technical Leader NGS Survey arose out of their July meeting and it was intended to survey NDIS and private laboratories for their general interest in NGS as well as to gauge current use of NGS among laboratories; it is expected that this may be an annual survey. Six laboratories reported they have implemented NGS and ten laboratories are validating NGS. Ms. Irwin explained the survey data, including laboratory timelines for implementation and barriers to the use of

NGS (e.g., cost, training, validation, acceptance). Katherine Getting, Co-Chair, reviewed the draft SNP Interpretation Guidelines in detail. The Committee will be reviewing their draft in light of the joint meeting and discussions with the Investigative Genetic Genealogy Working Group. A suggestion was made that the OSAC Human Biology Subcommittee has a NGS subtask group that may be able to offer comments.

Jocelyn Carlson, Chair of the Quality Assurance (QA) Committee provided an update on the Committee, including the addition of new members. Ms. Carlson explained that a complete review of the Standards may be expected as part of a five-year plan but that there would be a proposal for the revision of targeted Standards within the next two years (e.g. Standards 5 and 8, Case Expert System and Rapid DNA requirements). The Committee completed rough drafts of the Standards 5 and 8. The new approach to Standard 8 will be typing centric with a conceptual shift from internal validation to validation. Developmental validation will continue to be required for amplification kits. Validation requirements will be applicable to the “Big 3”: software used as a component of instrumentation; for the analysis and/or interpretation of DNA data; or for statistical calculations. With respect to Standard 5 revisions, the term “integral component” has been replaced with course work covering foundational scientific concepts relevant to human DNA; the review of personnel qualifications will be for one external audit and education/experience will be separated from the training reviews which will add in technicians. There was support among the SWGDAM body for the proposed changes.

Douglas Hares, Chair of the Rapid DNA Committee, provided an update on Rapid DNA noting that Louisiana and Florida have received their authority to operate Rapid DNA programs for law enforcement booking purposes. Dr. Hares explained that the Advancement Task Group has been working with the manufacturers on addressing the criteria previously identified for the current Rapid DNA instruments/Systems to be used for the analysis of crime scene samples. He reviewed the timeline for the Rapid multi-laboratory study, which will include ENFSI, which is scheduled for the summer 2023. Dr. Hares also explained that the Committee is developing drafts of two new QAS Standards to address Rapid DNA by laboratories and partner agencies.

Joel Sutton, Chair of the Autosomal STR Committee, provided an update on the Committee’s activities. He noted that the draft Guidelines for the Use of Probabilistic Genotyping with Autosomal STR Results will contain 11 Core Elements with key takeaways, guidelines, practical examples and a glossary. He noted that the introductory language in the guidelines was the subject of discussion and proposed new wording. Dr. Sutton noted that some laboratories do not use the SWGAM recommended verbal scale and that there seems to be a lack of understanding on how the scale was developed. The Committee worked with the Laboratory Operations Committee on the probabilistic genotyping module which refers to a verbal scale or qualitative equivalent. He proposes

that the verbal scale group be recalled to develop a more traditional SWGDAM Guidelines document and include the background information (empirical data) for the recommended verbal scale. There was support among the SWGDAM body for revisiting the verbal scale document.

Lisa Schiermeier-Wood, Chair of the Laboratory Operations Committee, continued the discussion relating to expressing likelihood ratios and noted that their committee is continuing to consult with the Autosomal STR Committee on this issue. They expect a poll will be coming out on this issue and encouraged participation. Ms. Schiermeier-Wood noted that their committee is also collaborating with the NGS Committee on the NGS validation module. She provided an update on the status of the various modules: overview; Rapid DNA; autosomal multiplex; probabilistic genotyping; and NGS. The Committee will be starting to draft a quantification validation module and is seeking input on liquid handler/robotics validations.

Dixie Peters, Chair of the Lineage Marker Committee, noted that the updated YSTR Interpretation Guidelines are available on the SWGDAM web site and that the Committee will be reviewing the mitochondrial DNA (mtDNA) guidelines next. A poster was presented at the ISFG meeting in late summer; it is also available in FSI: Genetics Supplement. They expect to separate the mtDNA documents into Guidelines and a Supplement/FAQ format while retiring the Nomenclature examples document.

Darrel Oubre, Chair of the CODIS Committee, introduced the Databasing subgroup which has been discussing how they will interact with the CODIS Committee and focus on a recommendations document for high throughput laboratories. The CODIS Committee is developing probabilistic genotyping and CODIS guidance. Their future issues include the following: differences between automated and manual hit counting; counting matches involving mixtures; eligibility scenarios, IT guidance; Standard 17 liaison and a listing of laboratory analysis profiles.

At the conclusion of the Committee updates, the Chair recognized SWGDAM members, Steven Myers and Charla Marshall, for recent achievements/awards.

III. Attendees:

Please see Attachment 2.

IV. Next Meeting:

The next meeting will be held July 18 – 20, 2023.

Attachment 1 - Final Agenda



SCIENTIFIC WORKING GROUP

DNA ANALYSIS METHODS

**SWGDM JANUARY 2023 VIRTUAL REGULAR MEETING
AGENDA**

Monday, January 9, 2023

1:00 PM – 5:00 PM ET

KEYNOTE SESSION: SMITHSONIAN INSTITUTION

Dr. Carla Dove, National Museum of Natural History, Feather Identification Laboratory

PARTNER AGENCY UPDATE SESSION

Legislative Update

Bureau of Justice Assistance

National Institute of Justice

American Society of Crime Laboratory Directors National

Institute of Standards and Technology

Biology/DNA Scientific Area Committee

Tuesday, January 10, 2023

COMMITTEE/WORKING GROUP BREAKOUT SESSIONS

Wednesday, January 11, 2023

COMMITTEE/WORKING GROUP BREAKOUT SESSIONS

Chair Anthony J. Onorato

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| SWGDM.org



SCIENTIFIC WORKING GROUP

DNA ANALYSIS METHODS

Thursday, January 12, 2023

1:00 PM – 5:00 PM ET

COMMITTEE OF THE WHOLE SESSIONS

Review of the SWGDAM NGS Committee TL Survey - NGS Committee

Review of the draft *Interpretation Guidelines for Single Nucleotide Polymorphism (SNP)*

Analysis by Forensic DNA Testing Laboratories - NGS Committee

Discussion of proposed changes to QAS Standards 5 and 8 - QA Committee

Discussion of Rapid DNA draft revisions - Rapid DNA Committee

Discussion of verbal equivalents for reporting LR's - Autosomal STR and Laboratory Operations
Committee

COMMITTEE/WORKING GROUP UPDATE SESSION

ADJOURNMENT

Chair Anthony J. Onorato

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| SWGDM.org

Attachment 2 - Attendees

**SWGDM January 2023 Virtual Meeting
January 9 – 12, 2023
Attendees***

SWGDM Chair
Anthony Onorato

SWGDM Vice Chair
Russell Vossbrink

SWGDM Executive Secretary
Dawn Herkenham

SWGDM Attendees

Chris Askew
Jack Ballantyne
Suzanne Barritt-Ross
Tiffany Bazazzadegan
Todd Bille
Andrea Borchardt
Thomas Callaghan
Jocelyn Carlson
Chris Carney
Amber Carr
Dorothy Catella
Michael Coble
Jerrilyn Conway
James Corcoran
Jennifer Coursey
Brenda Danosky
Angelo Della Manna
Carla Dove
Gregory Dutton
Eric Duvall
Neil Fernandopulle
Connie Fisher
Julia Garofalo
Russell Gettig
Katherine Gettings
Ann Marie Gross
Lisa Grossweiler
Jessica Hanna

Douglas Hares
Brian Harmon
Bruce Heidebrecht
Joseph Hof
Deedra Hughes
Ted Hunt
Jodi Irwin
Jessica James
Tracey Johnson
Kristy Kadash
Marla Kaplan
Susannah Kehl
Ben Knoch
Jason Kokoszka
Brandon Letts
Jason Linder
Eugene Lien
Lauren Lu
Charla Marshall
Barbara McCarty
Amy McGuckian
Scott McWilliams
Gary Molina
Shawn Montpetit
Lilly Moreno
Tamyra Moretti
Ashley Murray
Steven Myers
Vanessa Nelson
Mary Lou Nicholson
Sarah Noel
Jeff Nye
Darrel Oubre
Heather Parrish
Dixie Peters
Erica Romsos
Evelyn Ridgley
Lisa Schiermeier-Wood
Alyssandra Shaffer
Phillip Simmers
Rhalie Simmons
Christie Smith

Mark Smith
Carl Sobieralski
Joel Sutton
Tiffany Thoren
Andreas Tillmar
Peter Vallone
Jeanette Wallin
Susan Welti
Ray Wickenheiser
Richard Wilson
Tiffany Vasquez
Timothy Zolandz

*Attendance confirmed twice during the virtual meeting.