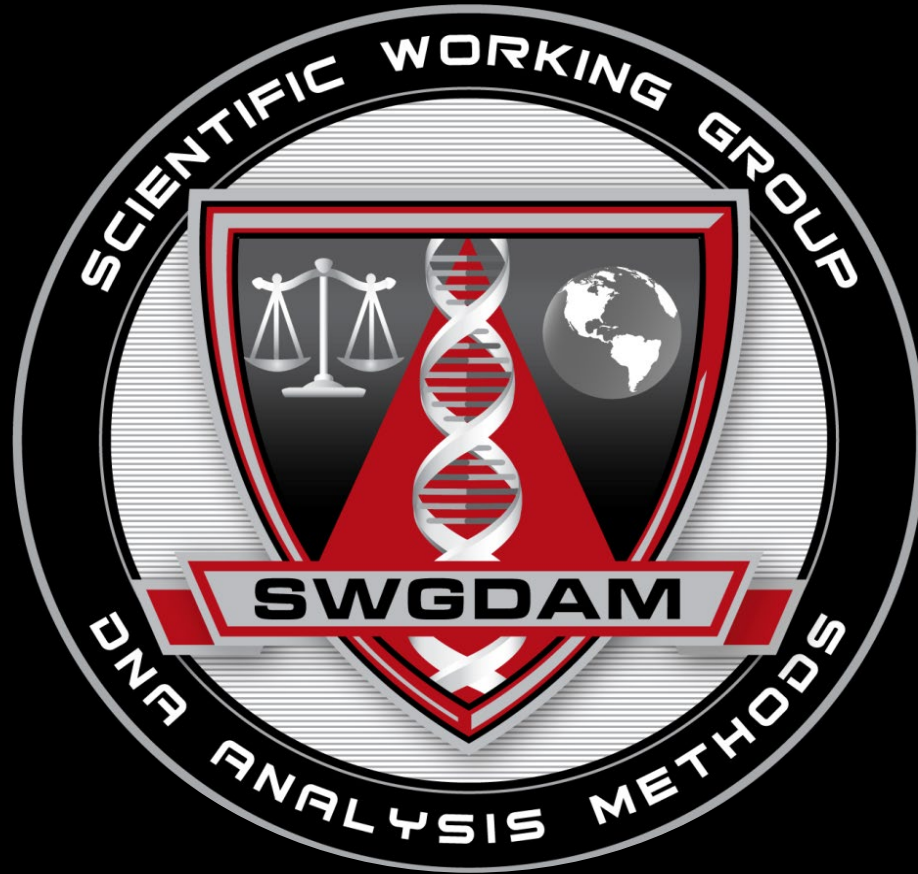


SWGDM Committee Updates



January 2024



Committees

- Autosomal STR Interpretation
- CODIS
- Laboratory Operations
- Lineage Marker
- Next Generation Sequencing
- Quality Assurance
- Rapid DNA



Committee Updates

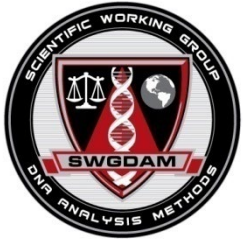


Autosomal STR



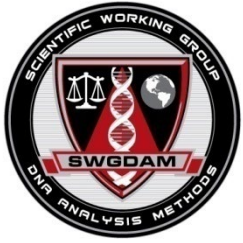
Committee Goals/Objectives

- Review and revise as needed the Interpretation Guidelines for Autosomal STR Typing
- Current objective is to draft new guidelines for interpreting probabilistic genotyping data using electrophoresis-based data



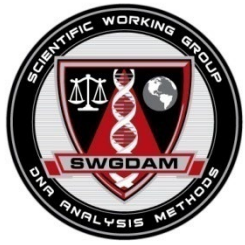
Committee Tasks/Accomplishments

- From July to December 2023, we continued to meet virtually to finalize the document
- The guidelines are now ready for SWGDAM review
- Will submit the draft to the Executive Board



Committee Tasks/Accomplishments

- Worked with PGRWG this week on topics for revising the Recommendations on PG Results Reported as Likelihood Ratios



CODIS



CODIS Committee Goals/Objectives

- To identify, evaluate and research issues relating to the use of CODIS in federal, state, and local forensic laboratories
 - If in the course of the review of such issues, the CODIS Committee determines that revisions to the FBI Director's Quality Assurance Standards for Forensic DNA Testing Laboratories and DNA Databasing Laboratories are needed, the Committee shall recommend such changes to the Chair of SWGDAM for consideration by SWGDAM.
 - If the CODIS Committee is presented with issues relating to the operation of CODIS, such as software functionality and performance, the Committee shall forward such issues and their findings/recommendations through the SWGDAM Chair to the Chief of the CODIS Unit.
 - The CODIS Committee will review issues requested by the NDIS Procedures Board through the SWGDAM Chair and will provide their findings and recommendations through the SWGDAM Chair to the Board.



Database Committee Goals/Objectives

- To share information regarding the high-throughput processing of DNA reference samples by law enforcement laboratories conducting forensic DNA testing and report to SWGDAM.
 - Recommend and develop guidance documents or other SWGDAM product for the high-throughput processing of DNA reference samples by law enforcement laboratories conducting forensic DNA testing.
 - Review and, as necessary, recommend revisions to the FBI's Quality Assurance Standards (QAS) and the NDIS Operational Procedures Manual for the consideration of SWGDAM.



Committee Tasks/Accomplishments

- Reviewed CODIS Handbook Scenarios
- NDIS Labs Analysis Profile (Instruments, kits, equipment, etc.)
- Forensic Partial Definition
- Probabilistic Genotyping and CODIS Guidance
- Automatic Hit Counting



Committee

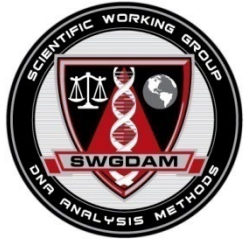
Pending/Outstanding Issues

Virtual Meeting will be held in Spring 2024 to discuss the following:

- Automatic Hit Counting Baseline
- Update CODIS Handbook on possession scenarios



Laboratory Operations



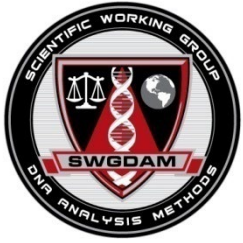
Committee Goals/Objectives

- Identify, evaluate, and research issues related to the efficient generation of high-quality DNA testing data by forensic laboratories
- SWGDAM Validation Guidelines for Forensic DNA Analysis Methods



Committee Goals/Objectives

- The Validation Guidelines were last overhauled in 2012
- The 2016 update included NGS information
- LabOps meets every other week to draft and discuss the validation documents/modules



Committee Tasks/Accomplishments

- LabOps introduced a new document structure to organize validation studies:
 - The “Overview” document addresses validation concepts common to multiple studies to avoid repetition in each study.
Overview document should always be used with the Module
 - The “Modules” are specific to a method and address the required validation studies.
 - Each Module has an example validation study in the appendix
 - References are provided at the end of the Module
 - Modules are posted as they are approved



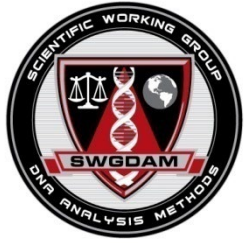
Validation Documents

- Validation Overview document
 - Multiplex Module
 - PGS Module
 - Quant Module
 - Rapid DNA Module



Document Status

	Executive Board comments	SWGAM comments	Public comments	SWGAM membership vote	Document posted on SWGDAM
Overview document	6/2021	7/2021	11/2021	10/2023	
Multiplex module	6/2021	7/2021	11/2021	10/2023	
PGS module	2023	3/2023	Pending		
Quant module					
rDNA module	6/2021	7/2021	11/2021	12/2023	



Future Plans

- Re-open the opportunity for feedback on all current draft documents

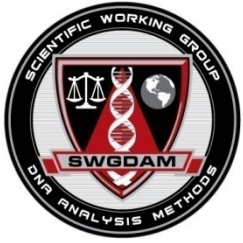


Lineage Marker



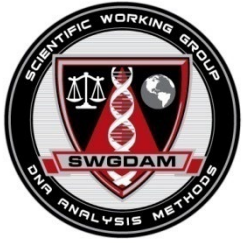
Committee Goals/Objectives

- Update 2019 mtDNA Interpretation Guidelines



Committee Tasks/Accomplishments

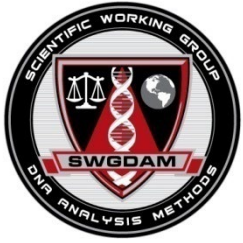
- July 2023, revised documents presented to SWGDAM body
- Since July, comments from body received and incorporated into documents
- During Committee meeting, refined documents
- Met with Walther Parson to discuss reduced mtDNA searches in EMPOP and upcoming changes to EMPOP



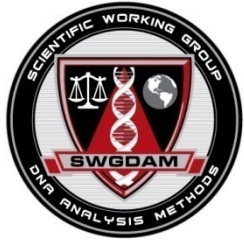
Committee

Pending/Outstanding Issues

- No substantial changes to documents
- Ready to move forward to Executive Board



Next Generation Sequencing



Committee Goals/Objectives

Identify, evaluate, and research issues relating to the forensic applications of next generation sequencing (NGS).

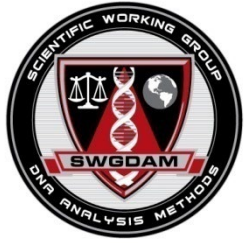
Tasks

- NGS revisions to existing SWGDAM Interpretation Guidelines
- Review and, as necessary, recommend NGS revisions to the FBI's Quality Assurance Standards (QAS)
- Generate and review forensic NGS data and make regular reports to SWGDAM



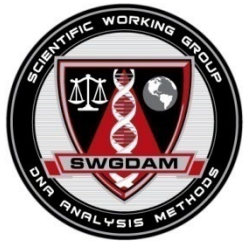
Committee's Current Tasks

1. Completion of SWGDAM guidelines for SNP Interpretation
2. Updated Lab/TL NGS Survey
3. Discuss QAS 2025 and QAS Guidance Document to address the handling of positive and negative controls in NGS workflows



SNP Guidelines

- Guidelines up for SWGDAM member vote January 2024
 - SWGDAM comment period: **Jan 12-Feb 6, 2023**
 - Over 400 comments received
 - NGS committee discussed IG Working Group comments on document and resolved those. Informed IGG WG that issues specifically related to IGG applications and whole genome sequencing will not be addressed in this document
 - Targeted public comment period: **June 27-July 14, 2023**
 - ~ 40 comments received



SNP Guidelines

- IGG Working Group comments re-introduced issues of SNP document scope
 - Scope was routinely discussed during original drafting of the document
 - IGG **application** of SNPs discussed
 - WGS **technology** for developing SNP data discussed
 - Kintelligence and IGG
 - After much discussion on multiple occasions, Committee always came back to the original intent: establishing guidance for commercially available NGS assays
 - NGS Committee considered:
 - That the introduction of IGG and WGS would substantially expand document scope (e.g., address microarrays?)
 - That SWGDAM guidance should be supported by scientific studies
 - Studies are still lacking for some topics that would need to be addressed
 - It is simply too early for us to put forth technical guidance on WGS
 - SWGDAM's role and for whom:
 - Role: ensure the quality of **forensic** DNA testing
 - For whom: labs performing **forensic** DNA testing
 - TL survey results on validation/implementation of commercial amplicon-based NGS assays
 - Yes, survey results support the utility of document



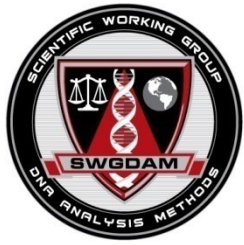
2023 TL NGS Survey

- 2023 survey mirrored 2022 survey to get year over year data on
 - Instruments
 - Assays
 - Use Cases
 - Implementation Status
 - Future Plans
- Preliminary results are similar to 2022 results
- Survey will be re-opened to capture additional responses

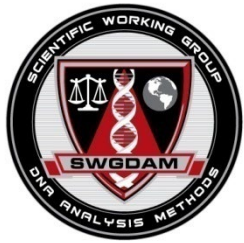


QAS and QAS Guidance Document

- Some NGS workflows preclude the handling of RBs, NCs and positives in typical CE fashion.
- NGS Committee may suggest changes to Standard 9.5 to address this issue and/or suggest changes to the QAS Guidance Document to address these workflows.



Quality Assurance



QA Committee Goals/Objectives

- The Quality Assurance (QA) Committee is a standing committee tasked to identify, evaluate, and research issues relating to monitoring and maintaining the quality of DNA testing results in forensic laboratories.
 - The QA Committee will review and, as necessary, recommend revisions to the FBI's Quality Assurance Standards (QAS)



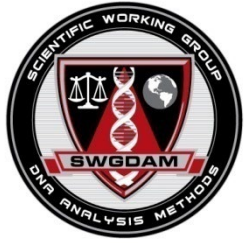
QA Committee Tasks/Accomplishments

- Combined meeting of the QA and Rapid Committees to review Rapid multi-lab data and discuss the Rapid QAS Standards.
- QA Committee met with laboratory directors representing CSFO, ASCLD, and AAFS to discuss concerns with qualified analysts moving to a new lab under the current QAS.



QA Committee Tasks/Accomplishments

- Further edits made from July 2023 feedback to the targeted revisions to the QAS were provided to SWGDAM body for review. Revisions include:
 - Edits to Standard 5 to relieve burden due to non-specific course titles frequently seen on college transcripts.
 - Edits to Standard 8 including overhaul of the software validation standards.
 - Edits to Standard 15 to allow for portability of education reviews
 - Edits to allow for casework expert systems
 - Additions for Forensic Rapid DNA programs
- Revisions were reviewed during Committee of the Whole Session.
 - Feedback will be used to fine tune revisions and continue work on QAS Guidance Document



QA Committee

Pending/Outstanding Issues

- Finalize language for targeted QAS revisions in preparation for SWGDAM and public comment.
 - Consult with Rapid Committee as needed for alignment of content and timelines.
- Complete corresponding QAS Guidance document revisions for simultaneous release for review.
- Create a survey in preparation for the next big QAS revision.
 - Pilot with SWGDAM membership after current targeted revisions are out for review
 - Goal to disseminate to TLs in 2024.
 - Allow users to identify "pain points" and areas in need of improvement.



Rapid DNA



Committee Goals & Objectives

- Rapid DNA Booking Station implementation
- Possible path to Rapid DNA and crime scene samples and CODIS
 - Anticipated changes to QAS
 - Guidance
- Missing Persons/Body ID and Rapid DNA



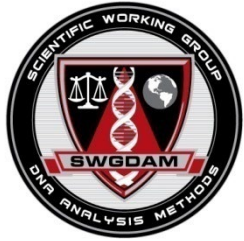
Committee Tasks/Accomplishments

- Monthly Web meetings August – December 2023
 - Included joint meetings with QA Committee
 - Prepared Rapid Standards 18 and 19 for a SWGDAM first look in January 2024



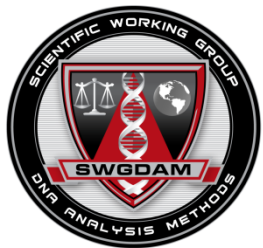
Committee Pending Activities

- Booking Station
 - Continue monitoring Booking Standards for any future changes
- Forensic Rapid DNA Program
 - Continue planning for possible crime scene evidence application and CODIS



Committee Future Meetings

- Continue monthly (or more frequent) web meetings.
- Incorporate SWGDAM comments from January 2024 SWGDAM meeting into Draft Standards 18 & 19.
- In conjunction with the QA Committee – submit Draft 2025 QAS Standards to SWGDAM Executive Board and recommend distribution to SWGDAM Body for official SWGDAM comment period.
- Address official SWGDAM comments to Draft Standards 18 & 19.
- Prepare Draft Standards 18 & 19 for public comment period.
- In conjunction with the QA Committee – submit Draft 2025 QAS Standards to SWGDAM Executive Board and recommend posting for a public comment period.
- Address public comments for July 2024 SWGDAM meeting.



SWGDM Contact

Anthony Onorato

SWGDM Chair

ajonorato@fbi.gov