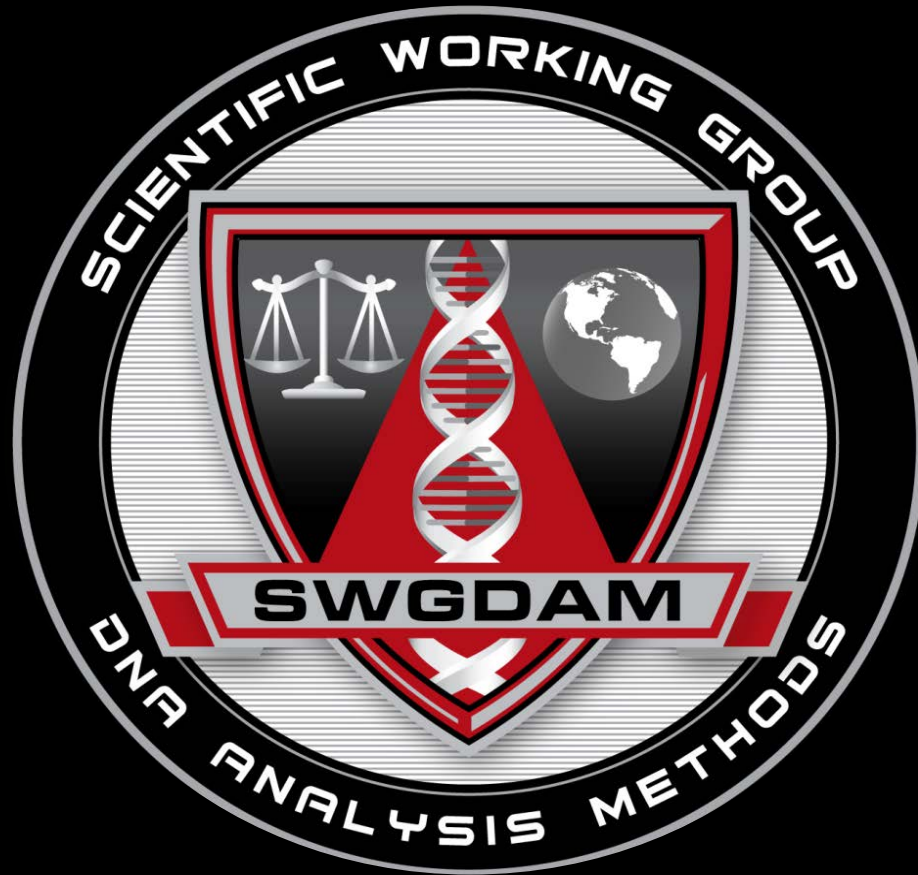


SWGDM UPDATE



ENFSI Meeting – April 2014



Autosomal STR Interpretation Committee



Autosomal STR Interp Committee Goals/Objectives

- Review and revise as needed the SWGDAM Autosomal STR Interpretation Guidelines



Autosomal STR Interp Committee Tasks/Accomplishments of Mtg

- We held two webinars (Oct 24 and Dec 5) since last meeting
- Reviewed feedback from TL Summit held Nov 20-21, 2013
- **Continued revising 2010 guidelines**
 - Currently 47 pages long... (considering adding an executive summary)
 - Nearly completed work on first three sections
 - Worked on probabilistic genotyping material
- **Have created an Examples Document**
 - Currently 34 pages long (would like to hyperlink from guidelines document to specific sections)
 - Developed to accompany guidelines to provide further guidance on specific mixture issues



Autosomal STR Interp Committee Tasks/Accomplishments of Mtg

- Some example additions to the guidelines:
 - Added to 3.5: ***“The fundamental tenet of mixture interpretation is to decipher possible genotype combinations of contributors, not simply to evaluate the presence or absence of alleles.”***
 - At the beginning of section 4, we have added definitions for “binary” and “probabilistic genotyping”
- CPI is still in there but with limitations stated



Autosomal STR Interp Committee Tasks/Accomplishments of Mtg

- **Met with EDMC Committee**
 - Briefly discussed software validation issues
- **Discussed challenges to implementing probabilistic genotyping**
 - Software/training purchase (front-end investment)
 - **Training** (concepts, MCMC, software, interpretation strategies, when and how to use in lab – types of cases, court testimony)
 - **Validation** (based on lab protocols and way system is used, parameters such as how many MCMC simulation cycles to run)
 - Report wording
 - Who will testify to the software? (admissibility hearings?)
 - Training and discussion with lawyers (prosecution and defense)
 - Replicate analysis of complex mixtures and how to handle potential variation in results
 - What constitutes a technical review?
 - Competency testing and proficiency testing



Autosomal STR Interp Committee Pending/Outstanding Issues

- Planning two webinar(s) to discuss document revisions
 - March 6, 2014 (1-3 p.m. Eastern)
 - May 1, 2014 (1-3 p.m. Eastern)
- **Some urgency has been expressed for software validation guidance to the community**
- **Goal to have revised guidelines for distribution by end of the July 2014 meeting**



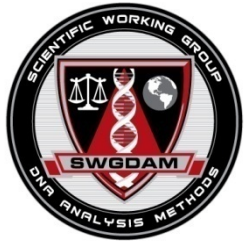
Autosomal STR Interp Committee

Contact Info

- Contact information for Committee
 - **John Butler** (chair) – john.butler@nist.gov
 - **Bruce Heidebrecht** (co-chair) –
Bruce.Heidebrecht@maryland.gov



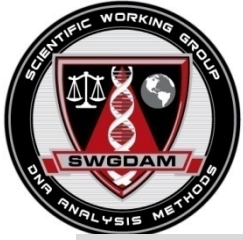
CODIS Committee



CODIS Committee Goals/Objectives

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 Convicted Offender 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.



CODIS Committee Tasks/Accomplishments

Tasks/objectives to accomplish:

- Provided input to the Rapid DNA Chair concerning potential clarification areas needed in the Database QAS for Rapid DNA devices
- Discussed possible future search strategy enhancements for the CODIS software
- Discussed future CODIS conference topics



CODIS Committee Contact Info.

Committee Point of Contact:

Committee Chair:

Douglas Hares

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Enhanced Detection Methods Interpretation (EDMI) Committee



EDMI Committee Goals/Objectives

- To write guidelines and validation procedures for Enhanced Detection Methods, including Low Template DNA Analysis.
- To complete this process by the end of 2014.



EDMI Committee Tasks/Accomplishments

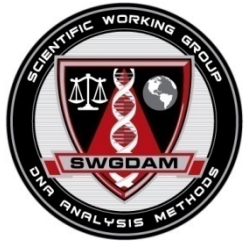
- Draft guidelines disseminated to committee members prior to meeting.
- Defined a “standard method.” [The method routinely employed to generate a complete profile for single-source samples of high quality and quantity (e.g., 1ng). The standard method can be applied to all sample types – including mixtures, low-quantity samples, and low-quality samples – wherein data obtained meets the criteria defined through internal validation and is demonstrated to be reliable.]
- Wordsmith each section.



EDMI Committee

Pending/Outstanding Issues

- This is our first pass through the draft document. Next few passes will be within weeks.
- Will do at least 2 email passes during the next month.
- Have a teleconference in early March.
- Present and solicit comments and suggestions from SWGDAM EB and SWGDAM body on or before next meeting.



EDMI Committee Contact Info

Committee Points of Contact:

Eugene Lien

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Missing Person- Mass Disaster (MP-MD) Committee



MP-MD Committee Goals/Objectives

- Finalized “Guidelines for Missing Persons Casework”
- The MP-MD Committee has completed its taskings and has been dissolved.
- As SWGDAM identifies new missing person/mass disaster taskings, it will address them via new Committee or Working Group(s).



MP-MD Committee Tasks/Accomplishments

- “Guidelines for Missing Persons Casework” approved by SWGDAM membership and available at [http://swgdam.org/SWGDAM Guidelines for MP Casework APPROVED 01092014.pdf](http://swgdam.org/SWGDAM_Guidelines_for_MP_Casework_APPROVED_01092014.pdf)



Quality Assurance (QA) Committee



QA Committee Goals/Objectives

- Discuss additional QAS Clarification questions
- Discuss questions posed by forensic community on QAS compliance issues
- Draft the “SWGDM Guidelines for the Performance of Serological Examinations by Forensic Science Laboratories”
- Draft the “SWGDM Evidence / Sample Handling and Contamination Prevention”



QA Committee Tasks/Accomplishments

- Discuss additional QAS Clarification questions
 - Using software as a tool for reviewing controls for casework
 - Recommend that labs can use the validated process as a “tool” to review the controls
 - Analyst shall document their review of the software results as documentation of meeting QAS
 - Drafted language to be added to QAS Clarification document
 - Submitting to EB



QA Committee Tasks/Accomplishments

- Discuss questions raised by forensic community on QAS compliance issues
 - Comparing CODIS hits when no analysts are qualified in the chemistry the original profile was developed
 - Drafted a response to be sent to laboratory
 - Submitting to EB



QA Committee Tasks/Accomplishments

- “SWGDM Guidelines for the Performance of Serological Examinations by Forensic Science Laboratories”
- “SWGDM Evidence / Sample Handling and Contamination Prevention”
- After discussion and research, combined into a single guidance document “SWGDM Guidelines for Collection and Precursor Screening to DNA Testing of Biological Materials”
- Draft in progress



QA Committee

Pending/Outstanding

- “SWGDM Guidelines for Collection and Precursor Screening to DNA Testing of Biological Materials ”
 - Continue to draft
- QAS Clarification Document
 - Software as a tool for reviewing controls for casework
 - Draft complete, submitting to EB
 - Comparing CODIS hits when no analysts are qualified in the chemistry the original profile was developed
 - Draft complete, submitting to EB



Contact Info

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Rapid DNA Committee



Rapid DNA Committee Goals/Objectives

- Instrument update with focus on control data
- Review of current QAS and draft of Rapid DNA amendments
- CODIS and Rapid DNA Integration- update on Tiger team
- Discuss possibilities for Certification/Accreditation/Approval of Rapid DNA instruments in a booking environment



Rapid DNA Committee

Tasks/Accomplishments of Mtg

- Update provided by NIST and FBI on NetBio DNAScan and IntegenX Rapid Hit 200
 - Interlaboratory Study
 - Current Performance
 - Control Study
- Discussion on Controls
 - What type
 - Purpose
 - How Often



Rapid DNA Committee

Tasks/Accomplishments of Mtg

- Stand alone document to address laboratories that implement Rapid DNA instrument for database, known or casework reference samples.
 - Definitions (Rapid DNA, Controls)
 - Standard 5-
 - Standard 6- Facilities (clarify for Rapid)
 - Standard 9- Analytical Procedures
 - Critical Reagent
 - Controls
 - Standard 10- Equipment Calibration and Maintenance
 - Time of performance check and after repair, service, calibration or idle longer than manufacturer recommendations
 - Standard 12- Review
 - Standard 13 - Proficiency Tests



Rapid DNA Committee Pending/Outstanding Issues

- Continue to review data
- Continue to monitor instrument performance
- Draft stand alone QAS document for discussion at July meeting
- Discuss long term implementation strategy for booking station



Contact Info

- Jennifer Wendel
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- Pete Vallone
Peter.vallone@nist.gov



Y- STR Committee



Y-STR Committee Goals/Objectives

- Review and address all comments following 30-day review of the *Interpretation Guidelines for Y-Chromosome STR Typing by Forensic DNA Testing Laboratories*
- Finalize *Guidelines* for vote on January 9, 2014



Y-STR Committee

Tasks/Accomplishments of Mtg

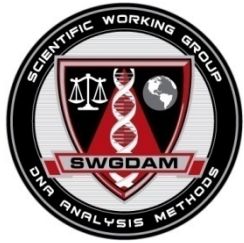
- Completed & reviewed *Guidelines* with SWGDAM body
 - Incorporated results of empirical studies performed by the Committee to support recommended statistical approach (e.g., upper confidence interval, match probability, theta)
 - Advocate usage of Y-STR typing by forensic laboratories
 - Referenced autosomal STR guidelines for fundamental aspects of STR typing
 - Detailed guidelines for interpretation of various Y-STR parameters, variants & results



Y-STR Committee

Pending/Outstanding Issues

- Statistical approach for indistinguishable mixtures will be addressed in subsequent meetings, to be incorporated in the next revision of the *Guidelines*.
- Identify additional experts to participate in developing additional interpretation & statistical approaches.



Y-STR Committee Contact Info

- Tamyra Moretti, Chair
tamyra.moretti@ic.fbi.gov
- Jack Ballantyne, Co-Chair
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Probabilistic Genotyping Working Group



Probabilistic Genotyping WG

Goals/Objectives

- Prepare guidelines for the validation of probabilistic genotyping software.
- Prepare guidelines for the interpretation of data generated by probabilistic software.
- Review the current QAS and NDIS Procedures related to the use of DNA typing software and provide what, if any, recommends it has for changes and/or additions to accommodate the use of probabilistic genotyping software for forensic DNA casework to the FBI and NDIS Procedures Board via the SWGDAM Chair.



Probabilistic Genotyping WG Tasks/Accomplishments

- The Probabilistic Genotyping Working Group held its first teleconference on March 18, 2014.
- The goal of the WG is to have a draft document for consideration by SWGDAM at its January 2015 regular meeting.



Probabilistic Genotyping WG Pending/Outstanding Issues

- LR cutoff values for reporting and report wording
- Including a suspect vs. deconvolution in unsub cases
- # of contributors – how to determine and how many models need to be tested
- Drop out and Drop In probabilities
- RFU cutoff for analysis
- Number of MCMC iterations
- Replicates
- Various Hd hypotheses
- What are results compared against



Probabilistic Genotyping WG

Pending/Outstanding Issues - QAS

- Standard 5 – Personnel
 - Training, Competency Testing
- Standard 8 – Validation
- Standard 9 – Analytical Procedures
 - Interpretation
- Standard 11 – Reports
- Standard 12 – Review
- Standard 13 – Proficiency Testing
- Standard 17 – Outsourcing
 - Vendor use of software



Probabilistic Genotyping WG

Pending/Outstanding Issues - NDIS

- If properly validated and not used as a complete “black box” a ProbGen derived profile is eligible for NDIS
 - Should there be an LR cut off for confidence
- ProbGen software does not meet the NDIS definition of an Expert System
- NDIS has defined Validation criteria for Expert systems
- NDIS does NOT allow:
 - Expert Systems for evidence samples
 - Low Template DNA techniques
- NDIS requires that profiles be:
 - Interpretable
 - Attributable to the putative perpetrator



Probabilistic Genotyping WG

Contact Info

- Timothy Zolandz, Chair
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- Mike Coble, Co-Chair
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