SWGDRUG Meeting Minutes
Savannah, GA
June 16-18, 2015

Core Committee Members (Present)

Scott R. Oulton, Chair, Drug Enforcement Administration
Sandra Rodriguez-Cruz, Secretariat, Drug Enforcement Administration
Michael Bovens, European Network of Forensic Science Institutes
Sylvia Burns, Key Forensic Services, LTD, England
Conor Crean, United Nations Office on Drugs and Crime
Richard Laing, Health Canada
Adriano Maldaner, Iberoamerican Academy of Criminalistics and Forensic Studies
Christian Matchett, Southern Association of Forensic Scientists
Richard Paulas, Midwestern Association of Forensic Scientists
Eric Person, California State University, Fresno
Karen Phinney, National Institute of Standards and Technology
Catherine Quinn, Victoria Forensic Science Centre, Australia
Pamela Reynolds, Federal Bureau of Investigation
Tiffany Ribadeneyra, Northeastern Association of Forensic Scientists
Sandra Sachs, California Association of Criminalists
Roger Schneider, Southwestern Association of Forensic Scientists
Angeline Yap Tiong Whei, Asian Forensic Sciences Network

Core Committee Members (Not Present)

Garth Glassburg, American Society of Crime Laboratory Directors
Udo Zerell, Bundeskriminalamt, Germany

Guests

Jack Mario, Northeastern Association of Forensic Scientists
Agnes D. Winokur, Note Taker, Drug Enforcement Administration and ASTM International

TUESDAY, June 16, 2015

Welcome and Opening Remarks – Scott Oulton

SWGDRUG Chair Scott Oulton opened the meeting by welcoming the committee members. He expressed his gratitude to Secretariat Sandra Rodriguez-Cruz for coordinating the meeting and making all the travel arrangements for the attendees. Mr. Oulton introduced and thanked meeting guests Jack Mario and Agnes Winokur. He briefly explained the week's agenda and his expectations. He noted changes to the SWGDRUG core committee. Suzanne Bell from West Virginia University has resigned from the organization. Robert Powers retired and Linda Jackson, Vice Chair, Mid-Atlantic Association of Forensic Scientists resigned at the last meeting. Mr. Oulton noted that SWGDRUG will need to fill one academic position, the MAAFS vacancy, and one other position.

SWGDRUG will remain to keep up with its other functions, such as providing monographs, supplemental documents, and search libraries for the seized-drug forensic community. Mr. Oulton stated that the SWGDRUG mass spectra library is getting a lot of use. He also stated that the DEA Special Testing and Research Laboratory (SFL1) is exploring options for obtaining ISO 34 accreditation for providing certified reference materials. Mr. Oulton noted that SWGDRUG was heavily represented (8 SWGDRUG members) in the Organization of Scientific Area Committees (OSAC).

- Twitter Account:
  Mr. Oulton discussed the success of the SWGDRUG Twitter account, which was formed to increase communication with field participants. He stated that the account was up to 110 followers. Mr. Oulton sends messages when new monographs are posted in the SWGDRUG website.

- Future Direction:
  Mr. Oulton discussed how SWGDRUG's mission changed during the last meeting. With the OSAC taking the lead in standard setting, SWGDRUG will stay away from writing standards, but will stay in existence and keep providing guidance and teaching documents for the international forensic community. At this point, funding should be available for one 2016 in-person meeting. Mr. Oulton is hopeful that in the future DEA will continue to fund SWGDRUG meetings, at least once a year.

- Goals for the Week:
  Mr. Oulton discussed the goals for the week and expressed his expectations. He encouraged the committee to be prepared to vote on SD-6 and submit the document for public comments.

  The Qualitative Method Validation Sub-committee still needs structure and they plan to work today during the sub-committee breakout session to identify the path forward.

Update from NCFS, FSSB, OSAC – Scott Oulton

Mr. Oulton described the general composition of the National Commission on Forensic Sciences (NCFS). The NCFS is a DOJ and NIST joint commission composed of scientists, attorney, judges, and victims' advocates. It is a high-level policy oriented advisory board for the Attorney General. The NCFS meetings are recorded and made available for download by the general public. Its recommendations are evaluated by the Attorney General and once approved, forwarded to the federal laboratories for implementation.

The OSAC is created by NIST and DOJ and consists of approximately 550 people. It is not a federal advisory committee, like the NCFS. Mr. Oulton discussed how most scientific working groups (SWGs) have dissolved, except for a few to include: DNA, digital evidence and drugs. The OSAC is now taking the lead as a standard setting organization. It reports to NIST and is comprised of Scientific Area Committees (SACs) and subcommittees representing the different forensic disciplines. The OSAC's goal is to support the development of forensic science standards and has three resource

committees available to assist the OSAC SACs and subcommittees: the Human Factor, Legal Resource, and Quality Infrastructure committees. It is expected that accrediting bodies will enforce the standards that are forwarded to the OSAC Registry. The OSAC subcommittees can make comments and recommendations for revisions to the standards, but cannot change the standards themselves. The comments need to be taken back to the Standard Development Organization (SDO) who created the standard. All documents posted on the registry need to go through an SDO-type process to qualify. For those documents that are authored by other entities (i.e., ENFSI-DWG and UNODC) and have not been through an SDO-process, they cannot be placed on the registry in their current form. Mr. Oulton encouraged the attending ENFSI-DWG and UNODC members to begin considering submitting their documents through an SDO.

ASTM Update and SWGDRUG Recommendation Harmonization – Scott Oulton and Agnes Winokur

Scott Oulton explained the ASTM technical contact role and how the role has now been passed to Agnes Winokur. Mr. Oulton explained that he expected the technical contact to harmonize documents within OSAC, SWGDRUG, and ASTM. Revision of ASTM documents occurs every 5 years, but could be initiated at any time by the technical contact.

Agnes Winokur provided an overview of the ASTM process in relation to the OSAC process and her role as technical contact and liaison between the two organizations. The OSAC Seized Drugs Sub-committee reviews ASTM standards and determines if they want to forward the document to the SAC and FSSB for inclusion in the OSAC Registry. If the sub-committee wants to incorporate revisions prior to inclusion in the OSAC Registry, then the standard must be taken back to ASTM. Ms. Winokur explained that as the technical contact, she would initiate the process to get the standard revised through ASTM. She sets up collaboration working areas within the ASTM website, so OSAC and other ASTM members can have discussion regarding revisions to a document, prior to submitting the document for ASTM balloting. Currently, she has created collaboration areas for 5 ASTM standards that are up for revision in 2015, of which two originated from SWGDRUG recommendations. She invited anyone who was interested in participating in these collaboration working areas to contact her. She explained that anyone can be invited to participate in these revisions through the technical contact, even those who are not ASTM members.

Richard Laing enquired if SWGDRUG could become an SDO. Mr. Oulton explained that SWGDRUG did not have the resources or member composition to meet SDO requirements. An SDO needs to have a balance of interests and a process in which documents are posted for public comment. The mission of SWGDRUG has changed and is no longer writing standards for the forensic community. Tiffany Ribadeneyra commented that SWGDRUG has a further outreach than ASTM or OSAC. Mr. Oulton stressed the importance of keeping SWGDRUG harmonized with ASTM and OSAC

standards. The group was in general agreement with the notion to update SWGDRUG recommendations to harmonize ASTM revised standards. Mr. Oulton requested that Ms. Winokur keep the group informed of ASTM revisions on standards that originated from SWGDRUG recommendations.

Mr. Oulton commented that the American Academy of Forensic Sciences (AAFS) is in the process of developing their own SDO and have been given funds of approximately $150k to investigate the process. AAFS hopes to have a mechanism in place by February 2016 that would allow standards to be taken through their SDO process. There are approximately 11 other SDOs that have been identified by OSAC.

Dr. Michael Bovens asked about the role of SWGDRUG in the future, if it cannot create standards. The group discussed the need of SWGDRUG to continue its presence and involvement in writing recommendations. Dr. Sylvia Burns pointed out that international concerns still needed to be addressed and asked if OSAC was considering international input. Christian Matchett and Scott Oulton both explained that OSAC sub-committees had the ability to invite guests to the OSAC meetings. Those guests could be representatives of international organizations. International participation is also encouraged to take place in the task groups and ASTM collaboration areas.

Update from OSAC Seized Drugs Subcommittee – Sandra Rodriguez-Cruz

Dr. Sandra Rodriguez-Cruz provided an overview of the OSAC organizational chart and offered a brief background. She explained that the OSAC is governed by the Forensic Science Standards Board (FSSB), under which 5 SACs exists. Each SAC has up to 6 subcommittees each specializing in a specific forensic science discipline.

Dr. Rodriguez-Cruz explained that OSAC was getting applications since August 2014. The FSSB has 14-15 members that represent the SAC chairs and has 3 resource committees to assist in the process. She further explained that the Chemistry SAC consists of the disciplines that are based on similar chemistry background and utilize the same instrumental techniques. There are 24 subcommittees that broadly translate to the scientific working groups that existed prior to OSAC. The FSSB continues to receive requests for the creation of new sub-committees.

Dr. Rodriguez-Cruz explained the OSAC member selection process. During September and October of 2014, OSAC had the sub-committee selections, which follow a mandate for membership composition consisting of 14 practitioners, 3 educators, 2 researchers (of which one should be a statistician), and 1 research and development. Dr. Rodriguez-Cruz explained the guidelines to follow when choosing members in order to have representation of the forensic science community at large (4 Federal, 4 State, 6 local, 4 academic, and 2 private). As the chair of the Seized Drugs sub-committee, Dr. Sandra Rodriguez-Cruz, along with two other SAC members, submitted a list with 25 names to

the SAC. The sub-committee decisions were made by the SAC and FSSB. The members were sent letters of invitation and all accepted.

Dr. Rodriguez-Cruz offered a synopsis of the first OSAC in person meeting, which took place in January 2015 in Oklahoma. Activities in Oklahoma consisted of electing officers, liaisons to the resource committees, revisions, deliverables, and the creation of task groups. The officers elected were the vice-chair and executive secretary. Liaisons were selected for the legal resource committee, human factor committee, the quality infrastructure committee, and the Kavi workspace tool. The sub-committee reviewed the By-laws, Terms of Reference, priority action reports, identified relevant standards and guidelines in the OSAC catalogue and created task groups (method development, terminology/report, training/competency, and catalog review). The OSAC and the Seized Drugs Sub-committee has had several meetings since Oklahoma. At the 2015 American Academy of Forensic Sciences meeting, the chairs of the 24 sub-committees provided presentations to the public regarding their sub-committee makeup and priority action reports. The next in-person meeting of the sub-committees is currently being scheduled and will either occur in December 2015 or January 2016.

Standards and guidelines are forwarded to the FSSB for approval and inclusion in the OSAC Registry of Standards, through the sub-committees and SACs. Standards are expected to be mandatory, while guidelines are recommendations. Dr. Rodriguez-Cruz explained that OSAC sub-committees were already evaluating and voting on a list of approximately 729 standards that were provided to the sub-committees. The Seized Drugs sub-committee has had an easier time because of SWGDRUG work throughout the years. While in Oklahoma, the sub-committee voted on two documents ASTM E2329-10 and SWGDRUG Part IIID (Analogues and Structural Class Determinations). E2329-10 has already been revised and the sub-committee should now evaluate E2329-14. The SWGDRUG Part IIID document will not be forwarded to the FSSB for consideration to the OSAC registry because it has not gone through an SDO process. FSSB is still working on its policies and procedures, but anticipates having the first list of standards in the registry by next spring. The Chemistry SAC has 6 sub-committees to represent 6 sub-disciplines: Seized Drugs, Gunshot Residue, Materials (Trace), Toxicology, Geological, and Fire Debris and Explosives. Some topics (i.e. terminology) are being addressed by multiple sub-committees.

Dr. Sylvia Burns asked about what is binding, once a standard goes through the OSAC process. Dr. Rodriguez-Cruz explained that once standards are approved by the FSSB and listed in the OSAC Registry of Standards, it is expected for accrediting bodies to enforce compliance to these standards, possibly as supplemental requirements.

ENFSI-DWG Update and Quantitative Sampling – Michael Bovens

Dr. Bovens discussed the ENFSI Drugs Working Group (DWG) workshop on quality and explained some points of interest to the group. He explained that the sub-committee

started with a wish list of what was needed to develop a modern laboratory for seized drugs. Dr. Bovens emphasized that the needs of the staff should not be neglected. He noted that so many laboratories focus on instrumentation and the facility, and subsequently neglect the needs of the staff. There should be finances for training, attending scientific meetings, and developing the leaders of the laboratory. Dr. Bovens spoke about the paradox of Quality Assurance: with time and resources, the system is becoming more administrative and time consuming in nature, without increasing the level of quality. He further discussed the development of quality assurance programs. Programs should be simplifying the process without losing the quality, which is an enormous responsibility. Assessors should be self-critical and should receive proper training. More emphasis should be placed in the training of assessors, so that they don't make things more complicated. Laboratories should avoid having their quality suffer under their quality assurance programs.

Dr. Bovens provided an overview of a new ENFSI sub-committee that has been created to discuss chemometrics. Chemometrics is the science of extracting information from chemical systems using statistics and applied mathematics. There is a clear trend of increased applications in forensic literature covering all forensic disciplines. Chemometrics is currently being applied in national forensic laboratories and universities. ENFSI is trying to spread the knowledge to laboratories less trained in practical and theoretical aspects of chemometrics. Dr. Bovens explained the general concept behind chemometrics involves determining whether an item belongs to a specific group. It involves analyzing whether an item has a common origin. Chemometrics can be applied to continuous data (like IR spectra) as well as distinct data (like impurities in a chromatogram). The subcommittee will be comprised of at least one statistician, university representatives and skilled forensic chemists who already apply chemometrics. Dr. Eric Person asked how an analyst would testify as to the results obtained. Dr. Bovens explained that the analyst should concentrate on the outcome and interpretation. The key was in the reporting of the conclusions. Dr. Sandra Sachs added that the strength of exclusion criteria can increase the strength of data on the stand.

Dr. Bovens provided a presentation on the Guidelines on Sampling Illicit Drugs for Quantitative Analysis. Dr. Bovens stated that the booklet can be downloaded from the website in the near future. He went through an example and explained the process using a sampling calculator. Dr. Bovens defined five types of materials and went through various examples for the group. For example, a bag of powder with typical heterogeneity of material has an estimated 10% uncertainty (at 1 gram level). The goal is to reduce the uncertainty (i.e. 5% RSD) through a sampling method for a material with a specific original heterogeneity. Dr. Yap asked how results were reported. Dr. Bovens explained that the report should state exactly what the analyst did to report a purity representing the entire sample population. Dr. Bovens noted that the calculator spreadsheet had been validated and a validation report generated, although the

validation report was not posted on the website yet. He noted that this project took approximately 7 years to complete.

Asian Forensic Sciences Network (AFSN) Update – Angeline Yap Tiong Whei
Dr. Yap presented an overview of the recent AFSN activities, including last year's AFSN Annual Meeting & Symposium in Seoul, Korea, a 4-day Cannabis Workshop in Singapore in March this year and another 5-day Basic Drug Analysis Course to be held in Singapore later this year. She also informed on the launch of the International Forensic Strategic Alliance (IFSA) Minimum Requirement Documents (MRDs) launch in Korea last year. She thanked the committee members for providing valuable inputs to the Drugs MRD.

Dr. Yap also presented on the 2014 Survey of the New Psychoactive Substances (NPS) situation and the top 5 abused drugs in each country in Asia, and contrasted the trend with that observed in 2013. She also gave an overview of how the emergence of these NPS represented various challenges for the laboratories, including the purchase of standards, development of validated methods, need for more advanced techniques, access to literatures, and issues with reporting.

Lastly, Dr. Yap presented an overview of the NPS situation in Singapore and the changes in legislation to add-in generic naming in order to keep up with the emerging NPS. Mr. Oulton suggested that perhaps for a future topic SWGDRUG should consider drafting supplemental documents to assist the legal and forensic science community, specifically in reference to reporting of these compounds.

The group discussed the need to add new compounds and do frequent updates to SWGDRUG libraries. Dr. Karen Phinney explained that NIST mass spectral libraries are updated every 3 years. Dr. Sandra Sachs stressed the importance for small laboratories to be able to compare spectra to a published source. Mr. Oulton asked Dr. Phinney to assist in setting up a meeting between DEA SFL1 and NIST to discuss and explore ways in which SFL1 can become accredited under ISO Guide-34. Dr. Eric Person asked if there's a way to tag a compound for other compounds that you cannot differentiate. Dr. Phinney discussed areas of contention such as the search engine for the libraries. She emphasized that more discussion and more detailed comments would be required to formulate an action plan to meet the needs of the forensic community. She estimated it would take approximately one year to review and evaluate all the standards in the SWGDRUG library.

Dr. Sandra Rodriguez-Cruz stated that the SWGDRUG library uses standards from different sources. Not all the standards have been authenticated or verified, and should not be used for final identifications. SWGDRUG uses a disclaimer on the website to notify users. Dr. Sylvia Burns pointed out that despite the disclaimer, analysts may likely use the SWGDRUG library to identify substances. The library is supposed to be an investigative tool, but there is some concern that analysts will misuse it. The group discussed whether they wanted people to use the library or purchase the standard

themselves to compare it to their data. Dr. Eric Person stated that implementation of method validation of qualitative methods has the potential of addressing these problems and concerns.

Qualitative Method Validation Sub-committee update

Ms. Catherine Quinn provided an update on the goals of the sub-committee this week. She anticipated for the group to formulate key concepts and begin creating a draft document for the core committee to review.

Uncertainty Sub-Committee Update – Christian Matchett

Christian Matchett provided an update on the uncertainty sub-committee meeting on Monday, June 15, 2015 and their progress. Christian Matchett, Dr. Sandra Rodriguez-Cruz, Pamela Reynolds, Tiffany Ribadeneyra, Roger Schneider and Agnes Winokur helped to edit the language to the proposed supplemental document. The scenarios in the documents were changed slightly and the group redid the mathematical calculations. He mentioned that he hoped to have a draft document for everyone to review and vote on by tomorrow afternoon.

Mr. Matchett demonstrated to the group the Southern Association of Forensic Scientists (SAFS) website for searching information on new compounds. Currently, the site has controlled access through SAFS and is funded through an NIJ grant. SAFS is currently looking for interested parties to continue the project, since the person maintaining the site is retiring in the upcoming year. Mr. Matchett explained that he estimated that keeping the current level of work with the site would require 10-12 hours a week, but general maintenance would be far less. Dr. Eric Person mentioned that volunteers may be available at universities through class projects in chemistry programs. Pamela Reynolds stated that she may know people who could be interested in the project.

Sub-Committee Break-Out

The core committee members broke out into their respective sub-committees for the remainder of the day.

WEDNESDAY, June 17, 2015

Dr. Conor Crean provided a demonstration to the group of the UNODC electronic portal available for all laboratories to use. The site can perform a trend analysis to determine where substances have emerged (i.e. per country, per region) and where the substance was reported. It is useful for countries to see where substances appear and where legislation systems are in place to address these substances. This information can be used by other countries to formulate legal responses to their own concerns. The site contains briefs that explain why certain substances should be controlled. UNODC is

starting to populate each page with as much chemical information as possible. The key is prioritizing substances based on the need for information all over the world. Through this site it is easy for people to report what they found and provide information to the public. There are challenges that include the different names a substance can have in different parts of the world. Terminology is an area that they are trying to address, by adding the various names to the site.

Sub-Committee Break-Out
The core committee members broke out into their respective sub-committees for the remainder of the day.

Sub-Committee Updates
Sub-committee updates were provided at the end of the day. Mr. Matchett asked the group to review SD-6 draft copy and be prepared to discuss tomorrow. He asked for everyone to focus on the content. Ms. Catherine Quinn stated she would show tomorrow the three areas that the qualitative method validation group was working on.

THURSDAY, June 18, 2015

Sub-Committee Break-Out
The core committee members broke out into their respective sub-committees for the early part of the day.

Uncertainty Subcommittee Update
Dr. Yap explained that, since the last meeting, the group had received inputs from various subcommittee and core committee members, as well as from Jack Mario and two statisticians, one from the OSAC Seized Drug Subcommittee and the other from the Nanyang Technological University in Singapore. The examples in the document were discussed and Dr. Yap explained the two principal ideas behind the document: what are these examples trying to teach the reader, and if the reader is new and not well versed in this topic, can the reader follow the examples. Dr. Eric Person recommended relating the examples to the existing SD-3 document, so that the reader could follow how the values for the measurement uncertainties were derived. Other comments discussed by the group involved the use of two balances with different resolutions. Dr. Sylvia Burns mentioned that the concept presented in this document seemed to contradict that given in the SWGDRUG Recommendations, which do not allow for non-statistical sampling approaches for cases when inferences on the population are to be made. Jack Mario stated that an approach could only be considered statistical if the selection of samples was random. The group discussed the need for the selection of the sample to be statistically based and whether a random selection automatically created a statistical approach. Dr. Sylvia Burns recommended re-conciliating the two documents by adding language that allows for the use of a non-statistical sampling approach provided that

the confidence level associated is computed. After much discussion, the group agreed to address concerns in the main document concurrently with a vote on SD-6.

Qualitative Method Validation Sub-committee update

Ms. Catherine Quinn described the three areas in which the sub-committee was concentrating. One group is working on the body of the document to explain the relationship between analytical scheme and validated methods. Another group is concentrating in the examples or scenarios for the document to help the user link it back to the language in the document. They are working on 3 example scenarios: GC/MS, Color Test, and IR. Both of the groups are creating frequently asked questions that can be addressed in the document (i.e. Why validate? How to validate an existing method?). The body of the document will reflect answers to those questions.

Meeting Close-out

Mr. Oulton thanked everyone for their hard work during the week and requested everyone's assistance in continuing to work on these documents. The goal is for the committee to approve a draft of SD-6 and edits to the general recommendations within the next few months and have them sent for community comment. He stated the next meeting would probably be in June 2016 on the West Coast.

Minutes respectfully submitted by Agnes D. Winokur.