



# MAAFS

# NEWSLETTER

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The MAAFS Newsletter is the official publication of the Mid-Atlantic Association of Forensic Scientists, Inc., and is published at least twice each year. All communications regarding the Newsletter should be sent to the Editor, Dr. Edward Sykes Franzosa, at the DEA Special Testing & Research Lab, 7704 Old Springhouse Road, McLean, Virginia 22101.

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## CERTIFICATION

Another part of our effort to keep you informed of what is happening in certification. On this and the following pages you will find *edited* minutes of the Criminalistics Certification Study Committee (CCSC) meeting held November 2-4, 1978, at Emeryville, California. That is followed by an *edited* report of the February 14-17, 1979, CCSC meeting at Atlanta, Georgia. The last section is the guidelines for the peer group subcommittees who will be developing the certification tests and procedures. If you feel that all this is too much to

read then I recommend that you at least review the guidelines for the peer groups. [If you do not read any of this material that is your decision but at least the information for making a decision is being made available to you - the MAAFS Newsletter Editor.]

*Please note that the program and abstracts for the Spring 1979 MAAFS - NEAFS Joint Meeting at Gettysburg, PA, follows the certification material. See you at Gettysburg!!!*

### SEVENTH CRIMINALISTICS CERTIFICATION STUDY COMMITTEE

November 2-4, 1978  
Emeryville, California

#### Attending Members:

Jan Bashinski

W. Jack Cadman (Chairman)

Anthony A. Cantu

Theodore R. Elzerman

Donald Flynt

James E. Hailigan, Jr. •

Richard Janelli

California Association of Criminalists

California State University at LA

Alcohol, Tobacco and Firearms

Midwest Association of Forensic Scientists

ASCLD

Southern Association of Forensic Scientists

Association of Firearms and Tool-Mark Examiners

Thomas A. Kubic	Northeastern Association of Forensic Scientists
Walter C. McCrone	Private Consultant
Joseph L. Peterson	Forensic Sciences Foundation
Eugene W. Rieder	FBI
Stanley Sobol	Drug Enforcement Administration
Willard C. Stuver	Dade County Crime Laboratory, Serology
K. M. Sweeney	Northwest Association of Forensic Scientists

Guests:

W. Jerome Chisum	Department of Justice, Criminalistics Laboratory Modesto, CA
Robert R. Ogle, Jr.	Forensic Science Associates, Emeryville, CA
Joan Provost	Acadiana Criminalistics Laboratory, New Iberia, LA
Patricia Zajac	Alameda County Sheriff's Department Crime Lab San Leandro, CA

Absent:

Shelton F. Payton	Canadian Society of Forensic Scientists
John O. Sullivan	LEAA Project Monitor

AGENDA

1. Introductory remarks (Cadman)
2. Minutes of the sixth meeting at Chicago on June 22-24, 1978 (McCrone)
3. Background:
  - a. FSF remarks (Peterson)
  - b. LEAA remarks (Peterson for Sullivan)
  - c. Certification feedback information to CCSC members (all CCSC members)
  - d. Status of laboratory accreditation (Flynt)
4. Reports by subcommittee chairpersons:
  - a. Progress report on the peer group on Firearms and Toolmarks (Janelli)
  - b. Progress report on the development of by-laws (Kubic)
  - c. Report on results of hair and fibers survey questionnaire (McCrone)
  - d. Updated report of results of serology survey questionnaire (Stuver)
  - e. Report of the results on laboratory questionnaires (McCrone)
    - 1) Evidence categories examined by practicing criminalists
    - 2) Analytical tools used in examinations
  - f. Progress report on the development of the forensic drug chemistry questionnaire (Ferrara)
  - g. Progress report on peer group nominations (Bashinski, Elzerman, Ferrara, Halligan, Kubic,

Sweeney)

5. Discussion of the acceptability of the term "criminalistic toxicology"
6. Discussion of the mechanics to be used in polling the criminalistics community if the CCSC finds certification to be feasible and desirable
7. Meeting work products:
  - a. Proposed by-laws to be used if certification is found to be feasible and desirable
  - b. Progress report of the peer group on Firearms and Toolmarks
  - c. Report on the results of hair and fibers survey
  - d. Report on the results of serology survey
  - e. Report of evidence categories examined and analytical tools used by practicing criminalists
  - f. Finalized questionnaire on forensic drug chemistry
  - g. Progress report on peer group nominations
  - h. A report of the CCSC findings to date for dissemination to all interested persons
  - i. A definition of the next task areas to be studied and the appointment of appropriate subcommittees

Items 3a, b. Jack then asked Joe Peterson to comment on FSF and, in the absence of John Sullivan, any relevant LEAA matters. Joe reported that the budget for all LEAA (National Institute) activities in the forensic sciences area for this year amounts to \$250,000, a much smaller figure than last year, and indicates that our support for the CCSC Committee will be decreased. The certification proposal now submitted to LEAA (National Institute) from FSF asked for \$155,000 for next year which would provide two meetings of this Committee and two meetings each for three peer groups (firearms, serology and drugs). Due to limited budget this year, John Sullivan suggested \$100,000 as a total figure and the Foundation has indicated that this is not acceptable. We can only wait and see what the final figure might be. The present appropriation will carry us through January 31, 1979. Joe further reported that he, Jack Cadman and Kurt Dubowski had met with John Sullivan, David Farmer, Blair Ewing and other LEAA top administrators to brief them on the Certification Committee's progress. He felt this meeting was very successful and the LEAA (National Institute) would do what it could to continue support. Nevertheless, the forensic sciences overall budget has been drastically cut.

Jack said he also felt the meeting was very useful and would help in our negotiations for next year. The long-term message, however, is that LEAA (National Institute) is not going to support us with a blank check for as long as we think we need to be supported. We may, in fact, be cut off at the end of 1979 and have to figure out some way to go it alone. Joe felt we should plan now to complete the certification package to be submitted to criminalists for approval during 1979. Thom Kubic asked whether Joe felt there were any other funding sources we might look to, and Joe responded that they had been looking, not only at other outside sources but also other groups within LEAA. The main difficulty, however, is that LEAA (National Institute) wishes to support research activities only and CCSC does not strictly qualify under that category. John Sullivan has informed Joe Peterson that he (the former) will recommend that the Certification Program be funded by LEAA in the future as an action program. At this time, it is being supported by the National Institute as a research program.

Joe also summarized the now awarded 15-month methods project which LEAA has granted to FSF. This will cover a review of the forensic techniques used in each of the various evidence categories, development of a mechanism for the evaluation of methods now in use and, finally, application of the mechanism for evaluation of two or more unchosen evidence categories. Alvin Bober, retired from the U.S. Customs Laboratory, has been hired by FSF for this program.

Item 3c. The Chairman thanked Joe for his report and asked each member of the committee to report any feedback they are getting on the certification question. Walt McCrone said he had been polling students in his microscopy workshops and felt there was increasing support for certification, principally on the basis that they felt it would improve their own position as well as upgrade the criminalistics profession. There are, however, two fears: 1) certification may lead to standardized methods, and 2) the cost of certification to the criminalist may be excessive. Bud Stuver also indicated an improved attitude on the part of criminalists in the Southeast, some of them worrying that someone else will do the certifying if criminalists don't do it themselves. He also pointed to a bill now being proposed in Florida which

would cover certification of criminalists. This bill seems to be in no danger of passage at this point and many changes in it will probably occur before it is ever voted on. However, it does indicate that the fears of criminalists that certification is coming might be true, and that they should get in there and do it their way rather than letting someone else do it for them. Tony Cantu reported that there is a similar movement in Maryland and that the public health people there are proposing "standard" methods for drugs.

Jan Bashinski reported that the CAC had had a one-afternoon panel discussion on certification at their October meeting and she now felt very positive about the reaction of the CAC people and, in particular, the CAC firearms people. There seemed to be fewer fears concerning certification and everyone was much better informed. She reported considerable forward momentum in CAC and a willingness to work on peer groups etc. in order to finalize the program. She indicated, however, that there is concern over the cost of certification to the criminalist, but added that she feels any accelerated pace necessary can be met. Bob Ogle noted a marked change in attitude due to improved communication and felt that the handouts by this Committee were very helpful in making this change. They no longer feel left out.

Ted Elzerman of MAFS said he felt most people in Illinois were in favor, but that the cost would be a problem. He reported lots of volunteers for the peer groups, including some who had been most against certification in the past. Stan Sobol feels that the Mid-Atlantic Association members are largely apathetic and are just waiting to see what the final package looks like. Tony Cantu reported that after a one-hour session at their Pittsburgh meeting he felt that "apathetic" was perhaps not the best term, but that everyone did seem to be waiting to see what the final package might be, and that cost, again, would be a problem. On the other hand, all MAFS members seem willing to cooperate by serving on peer groups etc.

Joe said some labs were paying the certification fees for individuals making application to other certification boards, particularly document examiners; this evoked a fair bit of discussion. In Chicago, for example, everyone has been told that if anyone pays for certification it will be the criminalist and the administrators of that laboratory are pretty anti-certification. This feeling is not shared by most of the rest of Illinois. A few laboratories, perhaps one-half, are paying the fees for document examiners applying for certification. Some labs say that if certification becomes a requirement for employment they will then pay the fees, otherwise not.

Coming back to the poll of the Committee regarding feedback of certification, Thom Kubic felt that he was a little worried concerning the reaction of NEAFS because they "weren't complaining" very much. He felt, however, that this meant most of them were happy about the way things were going and the only complaints he has heard recently have been about the possible cost. Kay Sweeney says there has been no real change in the Northwest, but that most of the laboratories in that area are indicating they will not pay the fees for criminalists. He said, however, that some criminalists were interpreting this to mean that certification might, therefore, be a good idea. Dick Janelli reported that cost was the main problem with his group.

Gene Rieder of the FBI said the Bureau's attitude was wait and see, but that the Bureau was thinking about budgeting for payment of fees for document examiners, and that we could expect support for certification by the FBI. Pat Zajac felt costs were a concern but that the group in California certainly wants to be involved in certification and expressed the general feeling as supportive. Jan Bashinski stated the the CAC wanted to see a fee system designed where there would be one base cost for the examination plus additional increments for added tests in other categories. Jim Halligan felt there was a great deal of interest in the Southeast. He noted that a significant number of SAFS members had expressed interest in being on one of the peer groups.

Item 3d. Don Flynt then reported on the status of laboratory accreditation. This is not moving at all rapidly, the report has been delayed and won't be finalized and presented for about another year with any action at least two years away. Joe Peterson asked whether we felt we would like to have ASCLD express support for the idea of certification and whether this might help influence individual laboratories into paying the certification fees. Don Flynt indicated that he would try to put this question on the agenda for the February meeting. Since this Committee (CCSC) represents the bench criminalist, it was pointed out that we must remember the dichotomy existing between laboratory directors and bench people; that criminalists want certification to be their baby and will work to do it in the best interests of the bench criminalist; some of them would not like to even see ASCLD approval expressed. It was pointed out that these are some of the facts of life that this Committee must continue to recognize.

Item 4a. Dick Janelli then reported on the AFTE peer-group meeting held in Chicago October 7-9. The Committee was very interested in this report because Dick's activity is a pilot-plant operation to see just what problems peer groups run into in trying to finalize the certification package. Dick distributed copies of the minutes for the meeting held in Chicago which included several attachments:

1. Background, functions and purposes of the American Board of Firearms and Toolmark Examiners, Inc.
2. Qualifications and requirements for certification in forensic firearms and toolmark examination.
3. A list of subcommittee assignments for work products due January 15, 1979.

It was apparent that this group is doing an excellent job; they were commended particularly by the Chairman and generally by the Committee members.

The fact, however, that the first attachment referred to an American Board of Firearms and Toolmark Examiners raised a particular question, and the Committee discussed whether there would be a separate board for firearms people or whether they would be part of the American Board of Criminalistics. Dick responded that we shouldn't pay any attention to semantics of that sort at this time. No final decision has been taken and he felt that they would probably decide to be a part of the American Board of Criminalistics. Thom pointed out they should keep their options open and decide at the proper time which course would be best for firearms examiners. Thom also pointed out that since we don't know what is going to happen in the way of continued support it may be necessary for them to go it alone. It might even be impossible for criminalists to follow through with any additional certification categories in the foreseeable future.

Dick pointed out how important it is that peer-group members be chosen with very great care with the hope they can work together and objectively to solve their problems. The firearms and toolmark peer group hopes to have their final package ready by next May. Thom suggested that their educational requirement (a Bachelor's degree) might be too stringent as things stand in the field at the moment, and suggested that it read "B.S. or equivalent in terms of experience". Dick said that the group was looking to the future and that this requirement might be waived during an initial period. Thom also had a question on the recertification examination for those grandfathered in, and Joe reported that it is stated in the fine print that a "grandfather" will have to take a recertification examination which will be the same examination given to all applicants in that particular year.

Dick concluded his report by saying that he felt everything was proceeding in a positive manner at this point and the only way they might reject certification in the final analysis would be the cost to the individual. He stressed that the report he presented was a draft and, because many changes will be made, he would not like to distribute it generally at this time. Jack Cadman suggested that we consider it, read it over carefully and discuss it with firearms people in our areas, but not send copies of it to the entire membership or enclose it with newsletters at this time.

Item 4b. Thom Kubic then reported on the development of by-laws. He presented a draft copy which had been developed with the help of an attorney, but which had not yet been finalized; the attorney still wished to check some particular points. One of the concerns is that individuals should be judgment-proof. He pointed out also that the tax-exempt status for the board requires that the individual members of the board, that is the regional associations, must also be tax-exempt organizations. Of the regional associations only SAFS is not incorporated and, therefore, not tax-exempt. Joe pointed out that excellent progress had been made by Thom on the by-laws and one reason was that the attorney is the same attorney used by other boards and he felt this was a big advantage. Thom concurred and indicated that he felt very positive about this particular attorney and his understanding of our particular problems.

There was some discussion as to whether there might not be at some time an overall board for certification in all forensic areas, not simply criminalistics, and it was decided that this kind of super-umbrella could be discussed only at a much later date. Thom then brought up another problem with the by-laws (Section 2e) in which a purpose of the corporation is stated "to maintain and furnish lists of individuals who have been granted certification by the board to interested persons." He felt he would like to add "on request" at the end of this sentence in order to make it necessary for interested parties to request information and that we shouldn't have to send out 5,000 copies broadcast. Some disagreed with this, especially Bud and Joe who like the flexibility of the present version. The consensus, however, was that the two words should be added to that section of the by-laws.

Item 4c. Jack then asked Walt to discuss his hair and fibers questionnaire. Walt asked for and received permission to discuss his three questionnaires at the same time. The first questionnaire on hairs and fibers was available as a computer printout to all of the Committee, courtesy of the FSF. Rather than discuss the questionnaire in detail, Walt pointed out that there was a tremendous amount of information in the tabulation. He stated that one of his purposes had been to find out what the state-of-the-art is at present as compared with what he thought the state-of-the-art should be and might be in future years. These differences do show up in the tabulation and are a guide to possible training areas. They will also be a very useful guide to the peer group which has to decide just which methods are now being used

and which should be used as a basis for certification testing. We should base our testing on the status quo rather than on what we think the criminalists should eventually be using. In spite of the 154 questionnaires that had been returned, there seemed some indication of lack of sufficient number for real statistical evaluation of the responses. However, it was pointed out that one should not look for detailed figures or try to make too much out of this tabulation than was present. As a broad picture, it was felt by Walt that the information could be useful and he asked the group to wait for his evaluation report at the next meeting. Part I of this questionnaire covered the background of persons reporting work on hairs and fibers; this showed that 85% have, at least, a Bachelor's degree, nearly a third have, in addition, a Master's degree and nearly 10% have PhDs. Most of those reporting, however, felt that the MS and PhD should not be required for certification. Most felt that the number of years of experience should not be too high for certification, especially in the hairs category, but that certification should be restricted to those who have active and fairly large caseloads in hairs and fibers.

Item 4e. 1). A second questionnaire, sent to crime laboratory directors, sought to determine which evidence categories are examined by the same individual and this questionnaire had been sent to laboratory directors. One hundred and seventeen responses were received and it became evident that tabulation of meaningful results would be very difficult. Walt pointed out it was obvious, looking them over generally, that most persons practicing in the area of criminalistics were generalists. Many persons overlap all four of the A through D evidence categories. Jack indicated that the FSF has authorized expenditure of a small sum of money to punch this information on cards and to tabulate the results by that means. This is proceeding now.

Item 4e. 2. A third questionnaire dealt with the tools used by persons in each of the evidence categories. Joe had tabulated the information from this questionnaire in two different fashions; one, to show the relative popularity of each tool for each particular evidence category and another to show in which evidence categories a particular instrument was used. This was done both in number of responses and percentage-wise. There was considerable discussion as to the meaning of the data and it was pointed out that the total figures were indications of the total number of uses of a particular instrument in that evidence category and, since a given examiner could use several different instruments within that category, it was not directly related to the number of questionnaires returned nor the number of criminalists working in that evidence category. It was, therefore, suggested that more meaningful statistics might be derived by normalizing the percentages, taking the most popular instrument for each evidence category as 100 and, further, ignoring any responses under 1% for any given instrument. Walt pointed out that the tabulations do show some general results; for example, the stereobinocular microscope, as expected, is the most popular instrument in the crime lab followed, somewhat surprisingly, by the comparison microscope, the GC, the polarizing microscope and infrared absorption.

More specifically, the most frequently mentioned instrumental techniques for each evidence category, in descending rank order, are as follows:

- Paint: (1) stereomicroscope, (2) GC, (3) IR, (4) comparison microscope, (5) emission spectroscopy, (6) polarizing microscope.
- Glass: (1) stereomicroscope, (2) hotstage, (3) monochromator, (4) polarizing microscope, (5) phase microscope, (6) emission spectroscopy, (7) dispersion staining.
- Soils: (1) stereomicroscope, (2) polarizing microscope, (tie) (3) comparison microscope, emission spectroscopy, (4) XRD, (5) x-ray fluorescence.
- Arson: (1) GC, (2) IR, (3) TLC, (4) stereomicroscope.
- Explosives: (1) stereomicroscope, (2) TLC, (3) infrared, (4) polarizing microscope, (5) GC.
- Gunshot residue: (1) AA, (2) stereomicroscope, (3) NAA, (tie) (4) SEM, SEM/EDXRA, (5) XRD.
- Firearms & toolmarks: (1) comparison microscope, (2) stereomicroscope.
- Blood & body fluids: (1) electrophoresis, (2) stereomicroscope, (3) phase microscope.
- Toxicology: (1) GC, (2) UV and visible absorption, (3) TLC, (4) IR.
- Controlled substances: (1) IR, (2) UV and visible absorption, (3) GC, (4) TLC, (5) microcrystal tests, (tie) (6) polarizing microscope, stereomicroscope.
- Marijuana: (1) stereomicroscope, (2) TLC, (3) GC.

Hair: (1) comparison microscope, (2) stereomicroscope, (3) polarizing microscope, (4) phase microscope, (5) SEM.

Fibers: (1) polarizing microscope, (2) stereomicroscope, (3) comparison microscope, (4) IR, (5) hotstage, (6) phase microscope, (7) GC.

A bit of discussion followed this, mostly indicating the Committee was trying to make more out of the responses than might be possible. Jack suggested that the peer groups would, with common sense, probably be able to make some use of the questionnaire in their deliberations. He suggested we ignore fractional percentages and consider general conclusions rather than try to get specific detailed interpretations out of it. There was some question as to how this information could be used to help in planning certification examinations. Jan indicated that she felt there were areas where percentages were large enough to be significant. It was obvious that these questionnaires have raised more questions, perhaps, than they have answered, and that much further consideration will have to be given before the information can be used by the peer groups. Walt suggested that there was a great deal of useful information and he would attempt to prepare evaluation reports for the next meeting.

Item 4d. The Friday afternoon session convened with Bud Stuver discussing his serology questionnaire. He felt that the results would be very useful to the peer groups, but that most of the conclusions of a general sort, at least, had been pointed out already and that no further discussion seemed necessary at this point. Everyone agreed.

Item 4f. Joe Peterson then discussed the drug questionnaire which he and Paul Ferrara had prepared. This provoked considerable discussion and considerable disagreement centering around Section 2 on the identification of controlled substances other than cannabis. Some felt that the naming of six drug categories: heroin, amphetamines, barbiturates, cocaine, LSD and PCP was either not the proper group or they were not defined correctly or that they should not be broken out individually in any case. Those who felt they were not the right groups could not agree on a better set of drugs, those who felt they were not properly defined would have used morphine derivatives in place of heroin and other similar minor modifications. Those who felt that all drugs should be lumped together so that people could simply indicate that they use, say, the polarizing microscope or microcrystal tests etc. for drugs period argued their position. This latter question took longer to resolve than the other two, but it was eventually decided to leave the six drug categories just as they were originally suggested by Joe and Paul. The next major question was whether microcrystal tests and color tests should be individually mentioned or whether they could just be inserted in the section 2.1 as individual methods for identification along with microscopical. It was finally decided that color tests would become 2.1.2 and microcrystal tests would become 2.1.3 with microscopical, then, 2.1.4. With this, Joe agreed to finalize the questionnaire and get it into the mail as quickly as possible. The Committee asked to see the final drug questionnaire one more time and Joe agreed to this intermediate step.

Item 4g. The Chairman then requested a poll of the association representatives on their progress toward peer-group nominations. Jan Bashinski described the procedure used by the CAC, saying that they had already set up methods for nominating and selecting peer-group members, and this procedure was outlined in the minutes of the last Chicago meeting. As a result of this, resumes have been submitted and considered by the Certification Committee. Selections have been made based on background of the individual and the Certification Committee's knowledge of his ability to perform and based on the number needed in each of the evidence categories. The selections have now been ratified by the CAC Board and four peer-group committees have been formed. Each committee had several benchworkers on it and they selected their own chairman who would be the representative on a national peer group if selected by that latter group. They were also charged with discussing and setting their own standards for certification and for preparing prototype examinations. These subcommittee reports are due in March 1979. There are six members on each of the four committees and the Chairmen are Al Biassoti, Firearms and Toolmarks; George Sensabaugh, Blood and Body Fluids; John Thornton, Drugs; and Cecil Hider, Trace Evidence. It was, again, obvious that CAC was well out ahead with their plan for setting up peer groups. Jan also reported on an afternoon panel session which helped to involve more of the CAC membership in the certification activities and Jack pointed out that this kind of involvement program would be a good one for each of the associations to copy.

Ted discussed the MAFS situation, but said that since he has just taken over from Bob Boese he wasn't as informed as he otherwise would be. He said that of the questionnaires returned concerning nominations for peer groups 44 had indicated specific evidence category interest, but had not volunteered for a peer group, whereas 23 others had not only specified interest in a specific peer-group area but also volunteered their services. These will be considered and they plan to proceed pretty much along CAC lines. They also hope to have a panel session on certification at the next meeting.

Tony reported on MAAFS, saying that they have polled the membership for nominations and will now follow pretty much the CAC procedure in setting up the peer-group committees. Jim Halligan said that whereas the feeling was pretty negative at the last meeting with respect to cooperation by SAFS he feels they were now more willing to cooperate. SAFS has a method of making nominations and will be able to

select peer-group committees. Jack asked if there was a way that SAFS could get more interest by involving more members in the selection procedure. Jim said he felt there was, that he liked the CAC procedure and they will consider taking basically the same approach.

Jack said that all groups should set up four local peer-group committees covering not only D1, D2, and D3 but other trace evidence, including paint, glass, soils and gunshot residue. Thom then precipitated considerable argument by saying that he didn't know what "trace" means because their laboratory people do not break down the way perhaps other laboratories might break down their people in trace evidence groupings. For example, hairs in his lab is done in serology, and fibers are done in another group. Therefore, hairs and fibers, when characterized as one of the trace evidence categories do not fit his needs. Walt pointed out that the instrumentation and techniques used for nearly all of the trace evidence categories under group D were the same and basically the techniques able to deal with small particles. On this basis, the peer groups could formulate questions based on methods and techniques for most of their examination with only a few questions covering specific application of those methods to the individual trace evidence categories, and these could perhaps be multiple choice questions for the persons applying for certification. The certification could be given for the entire trace evidence category, but with specific mention of those particular categories in which the person can qualify for certification. This is something like the Army system of giving a sharpshooter a medal with bars added thereto for the particular weapon in which the sharpshooter qualifies.

This question was not completely resolved and perhaps need not be at this stage since it is already known that insufficient funds are available for meeting of trace evidence peer groups next year in any case. Jack suggested that we proceed with meetings in the evidence categories of firearms, blood and drugs/"toxicology", but that we continue actively working up peer-group activity in the trace evidence category so that one way or another we can add this group when the time becomes appropriate. Thom reported that NEAFS is ready to supply names almost immediately for serology and for drugs and toxicology as soon as those categories are fully defined and we know what we are going to do relative to toxicology. Kay Sweeney said they have nominations, they do not yet have resumes for those nominated, but they will proceed pretty much along CAC lines.

Item 6. Jack stressed that he felt it was very important the final package be discussed in detail at the fall 1979 regional meetings so that questions can be answered, and everyone would have an opportunity to discuss the matter fully. He suggested a panel-type meeting such as the one held by CAC. Most of the regional representatives felt that final mail ballots would get better representation of their members. Jack stressed that this should be after the panel discussions at the regional meetings. There was considerable discussion concerning timetable and mechanism of voting, and it was decided that a mail vote would be necessary and that it should go out in the usual fashion with an internal, unsigned envelope mailed with an outside envelope on which the name, address and signature of the person would appear. There is a problem in that not all persons are members of one of the regional associations, and there has to be some mechanism by which nonmembers can easily obtain ballots. It seemed reasonable that ballots would be printed, sent to the regional offices and mailed to their membership with the information that additional ballots could be obtained by contacting each regional office.

Jan brought up an interesting question as to what would happen if one particular region, say CAC, perhaps overwhelmingly approved certification whereas the other regions disapproved. Would CAC be able to set up a certification program on their own, at least for their region? She also asked, however, what if 45% overall approved but were outvoted by a majority, would we be able to do anything for the 45% who were in favor of it, or would that vote kill the national committee? The consensus seemed to be that a negative vote would kill the national committee and what any individual region then does is entirely up to them. Dick Janelli asked what if individual evidence category groups decided to go it alone as perhaps firearms or serologists might decide to do? This, again, would be up to the persons in those two groups and nothing in the national ballot would say they should not proceed if they wished toward certification.

Walt McCrone precipitated a long discussion when he suggested that perhaps the 30-40 page proposed package covering all aspects of certification could probably be shortened to one single page which would indicate only the cost of certification to the person. He felt that this cost figure would decide the whole issue. There seemed to be some agreement among the rest of the Committee for this point of view, and it was agreed that the percentage approving certification would be directly related to the certification cost to the applicant. It was pointed out that the certification will soon have to be self-supporting and that considerable overhead costs are involved. Joe said that about four hours of secretarial time (with overhead, about \$40) is required simply to process each application, from the time it arrives in the Foundation office until final resolution is made by the Board on the application. The examination is another matter and continuing overhead costs of maintaining an office with staff and records must be covered by the certification fees. The fees should obviously depend on the number of applicants. There were so many imponderables that no conclusions could be drawn at this stage. Everyone was asked to seriously consider this question so that we may be able to finalize it at the next meeting.

The most likely timetable for these activities involves a meeting of CCSC at the Atlanta meeting to set up the peer groups who would then hold two meetings during the next 3-4 months. Jan stressed that



the peer groups need two meetings and considerable time to make ready their part of the final package, and that it is unlikely we would have the package ready for submission to the criminalistics community before August, and final approval at or shortly after the fall meetings of the various regional groups in October. The meeting then adjourned for lunch with instructions to return at 1 p.m.

The meeting reconvened with a continuing discussion of the timetable for the peer-group and CCSC meetings. Jan suggested that the CCSC should give each of the peer groups a package of guidelines, background and expectations to help them in their planning. Jack took this opportunity to appoint Jan Chairman of a committee to prepare such a package to be ready by the February CCSC meeting. Stan Sobol and Bud Stuver both volunteered to assist Jan. The final result of the discussion concerning the timetable for 1979 follows:

<u>Group</u>	<u>Date</u>	<u>Agenda</u>
CCSC meeting	February 10-11	Choose peer group, by-laws, reports on questionnaires etc.
Peer group meetings	About March 15	Standards for certification, requirements for recertification, testing mechanism and form of examination, grandfathering.
Peer group meetings	About June 1	Continuing discussions and preparation of final package for CCSC.
Peer groups	July 15	Submission of final package to CCSC.
CCSC meeting	About August 1	Go over the peer-group final package and prepare CCSC final package for criminalistics community.
CCSC	About August 20	CCSC package ready to mail to criminalistics community.
All regional associations	September-October	Package presented to all regional groups.
National criminalistics community	About November 1	Balloting takes place.
CCSC meeting	About November 15-30	Final meeting and discussion of results.
ABC?	January 1980?	First organizational meeting of the American Board of Criminalistics?

The last two meetings might be combined. A motion to adopt this calendar was passed with only one negative vote by Thom Kubic who felt a midyear meeting of the CCSC was necessary.

Dick asked whether his group on firearms should send out a total package to their entire AFTE membership when they complete their work in May or June. After some discussion it was the feeling of the Committee that everyone should receive the final package at the same time and that the AFTE group should wait until the total package is ready for the entire criminalistics community.

Committee assignments for tasks to be completed by the February meeting include the following: Jan, assisted by Bud Stuver and Stan Sobol, to prepare a package of background, guidelines etc. for the peer groups. Thom Kubic will continue his discussions with the attorneys and report back with the final

by-laws so far as he and the legal people are concerned. Jack will report to the Academy criminalistics section on the activities of CCSC at the Atlanta meeting in the same manner in which he reported to the St. Louis meeting. Joe will finalize and mail the forensic drug questionnaire. Bud will work on the serology peer-group nominations. Dick will continue his "guidance" of the firearms and toolmarks peer group. Jan will report the conclusions that can be drawn based on the serology questionnaire, and Walt will do likewise for the hairs and fibers questionnaire and the questionnaires on evidence categories.

# REPORT OF THE CRIMINALISTICS CERTIFICATION STUDY COMMITTEE

## TO THE ACADEMY OF FORENSIC SCIENCES

### CRIMINALISTICS SECTION

February 14, 1979

Several important advances were made during the last year by the Criminalistics Certification Study Committee (CCSC). Since the last business meeting of the AAFS Criminalistics Section in St. Louis, the CCSC has met four times. The progress made at each of these meetings, except the most recent, is documented in detail in the minutes of the CCSC. The minutes of the most recent CCSC meeting held here in Atlanta on Sunday and Monday, February 11-12 will be completed and mailed out soon. The last year's activity will not be presented in detail in this report due to strict time limitations. All interested persons should be receiving copies of the minutes through the regional associations. If you have not been receiving these, contact the Forensic Sciences Foundation, your regional CCSC committee representative, or regional association (see Attachment I for CCSC members).

#### PEER GROUPS FORMED

Following democratic and effective procedures, each regional association polled the members and as many non-members as possible within that region. The actual methods for the selection of nominees was left up to the regional associations, although the CCSC did review the procedures used only to assure that the methods used were fair to all. Nominations were then made by the regional representatives on the CCSC, thus assuring the optimum geographic distribution in the interests of fairness. Structured resumes of each candidate were received by the CCSC and voted upon at our most recent meeting here. All nominees were unanimously elected. Alternates were also selected as backups in the event any of the original peer group members could not serve. In the interests of continuity, it should be stressed that all alternates will be kept informed of all progress. They will work with and assist the peer group members. However, it is not the intention of the CCSC that there be a free substitution of the alternate for the peer group member.

#### FIREARMS AND TOOLMARKS PEER GROUP

The selection of the Firearms and Toolmarks peer group was conducted in a similar manner, although the nominees were primarily made by the Governing Board of the Association of Firearms and Toolmark Examiners (AFTE). The Firearms and Toolmarks peer group was selected by the CCSC as the first or pilot peer group because of the fact that AFTE had been working on this problem prior to the first meeting of the CCSC, (actually the second meeting of criminalists under the original FSF grant). Nine members and three alternates were unanimously approved by the CCSC. The Firearms and Toolmarks peer group has met twice. They have made excellent progress to date in setting requirements defining the field. A third peer group meeting has been set for

March 3-4, 1979, in Atlanta, Georgia. The peer group hopes at that meeting to resolve, in a fair and equitable manner, their remaining obstacles. Acceptance of these requirements by the nationwide criminalistics community will be a function of how well the peer group is able to resolve these problems. Liaison person with the Firearms and Toolmarks peer group is CCSC committee member Richard Janelli, from the Nassau County, New York Crime Laboratory.

#### SEROLOGY (BLOOD AND OTHER PHYSIOLOGICAL FLUIDS) PEER GROUP

Two meetings of the Serology peer group are planned during the Spring of 1979. The actual dates and locations of these first two meetings are yet to be selected. Peer group members will be charged with the selection of their own chairman. CCSC committee member Willard C. Stuver, Dade County, Florida Crime Laboratory, has been appointed as the liaison representative with this peer group (see Attachment II for peer group members).

#### DRUGS/TOXICOLOGY PEER GROUP

Two meetings of this important peer group are also planned. Dates and locations of these meetings have not been finalized. The names of the peer group members are listed at Attachment III. The chairman of the CCSC and interested members of the committee met with the American Board of Forensic Toxicology (ABFT) regarding the certification of criminalists doing toxicological analysis.

I have spoken with Dr. Robert Blanke, President of the American Board of Forensic Toxicology, concerning the decision of ABFT regarding certification of individuals performing toxicological examinations in crime laboratories yet who do not have a Ph.D. or satisfy the Board's full-time experience requirements. In general terms, the Board has decided to assume responsibility for certification of these forensic scientists. In the next week or so I will be sending you a more complete statement concerning ABFT's decision and their preliminary ideas on a parallel credentialing process for the crime lab toxicologist. After talking with Jack Cadman and Stan Sobol, we have decided to proceed with the Drug Peer Group, with membership now to be limited to drug chemists.

#### TRACE EVIDENCE PEER GROUP DEVELOPMENT

Because the present LEAA Grant does not provide for travel funds for the peer groups involving the complex subject of trace evidence, the CCSC has postponed the nomination of national peer group members. However, each of the regional representatives was instructed at the recent meeting to proceed in an effective, democratic manner to find nationally acceptable peer group nominees. By the August meeting of the CCSC each regional representative should have three nominees for the following areas (one for each category combination): (1) arson and explosives, (2) hair and fibers, (3) paint, glass, soils and gunshot residues. (Refer to minutes of the seventh meeting, p. 8.) The target date for the selection and first meeting of the trace evidence peer groups is the Spring of 1980. Concerned members of the nationwide criminalistics community should contact the appropriate regional representative, if interested in being considered for any of the trace evidence category combination peer groups.

#### THE ROLE OF THE PEER GROUP SUBCOMMITTEES

The role of the peer group subcommittees above is to define acceptable levels of professional competence in the various disciplines of criminalistics and to design a national certification program to determine if candidate practitioners meet these accepted minimum requirements. The target date for the submission of the work products of the Serology and Drug/Toxicology peer group work products to the CCSC is July 15, 1979.

The work products of the peer groups will be reviewed by the CCSC for conformity to the guidelines given them. Following the review process, the work product recommendations will be used by the CCSC to assess the feasibility of a national certification program. The CCSC will construct a proposal on national certification incorporating the peer group proposals and submit the concept to the nationwide criminalistics community for approval in the Fall of 1979.

#### THE ROLE OF CCSC VIS-A-VIS THE PEER GROUPS

A representative from the CCSC will sit on each peer group committee, acting as liaison officer. The representatives will be responsible for informing the peer groups as to the CCSC policies and guidelines and for communication between the various peer groups. The CCSC will oversee the efforts of all peer groups and retains the authority to modify the recommendations of the peer groups if needed to fit them into the overall certification proposal.

#### PROPOSED BYLAWS FINALIZED

The bylaws to be used by the American Board of Criminalistics, Inc., (ABC) were revised extensively from those originally proposed. The revisions were made primarily to make the ABC more responsive to the needs of the nationwide criminalistics community. All membership and Board meetings would be open (when reasonable and practical) to representatives of forensic science organizations, laboratory systems, interested individuals, etc. These non-voting attendees would be encouraged to express the views of their organizations on issues of interest to the Board. The Bylaws and Articles of Incorporation have been reviewed by legal counsel and have been found to meet all relevant IRS and governmental requirements.

The CCSC plans to include full copies of the proposed Bylaws and Articles of Incorporation of the ABC in the voting package this Fall. All persons in the nationwide criminalistics community are urged to read the Bylaws. (The concepts of the changes made are to be found on pages 7 and 8 of the Minutes of the Sixth Meeting of the CCSC.)

#### PROJECTED TENTATIVE COSTS OF CERTIFICATION

It is the consensus of the CCSC at the present time that the minimum costs to the individuals applying for certification will be as follows:

##### Basic Cost

Application fee (non-refundable)

\$75

Examination fee for one specialty area (for example, firearms)	50
<hr/>	
Tentative Total Cost for Application, including certification in one specialty area such as firearms	\$125

(If the initial certification is by "grandfathering" the cost to the individual is the same for one specialty area including the privilege of taking the specialty certification examination when it is offered - most likely within three (3) years.) \$125

#### Additional Examinations

The CCSC has tentatively determined that examinations will be offered in : 1) firearms, 2) serology, 3) drugs and 4) trace evidence. Within the trace area, three exams will be offered: a) arson and explosives; b) hairs and fibers; c) paint, glass, soils and gunshot residues. The charge for examinations in the first three general categories will be \$50/examination; however, in the trace evidence area, the first exam would cost \$50, the second \$50, but if the applicant wishes to take all three trace examinations, the cost would be a flat \$100 (a savings of \$50).

Examples of fees for applicants wishing to be certified in more than one specialty area follows:

Total Cost for Application, including certification in one specialty areas such as firearms	\$125
Additional cost for exam in serology, for example	+ 50
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Subtotal - includes certification in firearms and serology, for example	\$175
Additional cost for exam in drugs, for example	+ 50
<hr/>	
Subtotal - includes certification in three specialty areas: firearms, serology & drugs	\$225
Additional cost for certification in one trace evidence area, such as arson and explosives	+ 50
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Subtotal - includes certification in firearms, serology, drugs and one trace area	\$275
Additional cost of one or two additional trace examinations	+ 50
<hr/>	
Total Maximum Cost for certification in <u>all</u> areas of criminalistics	\$325

## CALENDAR

In summary, the CCSC proposes to follow the target dates below:

<u>Group</u>	<u>Date</u>	<u>Agenda</u>
Peer Group Meetings:	To be held About:	Requirements for Certification, requirements for recertification, testing mechanism and form of examination, grandfathering, etc.
1) Firearms	March 3-4, 1979	
2) Drugs	March 15	
3) Serology	April 15	
Peer Group Meetings:	To be held About:	Continuing discussions and preparation of final package for CCSC
1) Firearms	May 12, 1979	
2) Drugs	June 1	
3) Serology	June 15	
Serology, Drugs & Firearms	July 15, 1979	Submission of final packages to the CCSC
CCSC Meeting	August 2-4, 1979	Review the peer group final packages for criminalistics community
CCSC	About August 20	CCSC package ready to mail to the criminalistics community
All regional forensic assoc.	September - October 1979	Package presented to all regional associations
National criminalistics community	About November	Balloting takes place
CCSC Meeting	About December	Final meeting and discussion of results
ABC, Inc. ?	January 1980	First organizational meeting of the American Board of Criminalistics, Inc. ?

The CCSC must proceed as though we intend to pursue certification for certain in order to make progress to attain our final goals of determining desirability and feasibility. If the peer groups make it appear that it will not be feasible or too costly to persons who will be applicants for certification, the CCSC will not follow the calendar above until the matter is resolved.

All persons in the criminalistics community are urged to discuss any questions or problems they find in this report or any work product of the CCSC with any member of the committee. This is your committee. We need your input to complete this study.

Copies of the full minutes of the most recent and all other meetings are available to all persons who request them.

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# CRIMINALISTICS CERTIFICATION STUDY COMMITTEE (CCSC)

## Guidelines for Peer Group Subcommittees

Adopted in Atlanta, Georgia, February 12, 1979

### I BACKGROUND

The role of the Peer Group Subcommittees is to define acceptable levels of professional competence in the various disciplines of criminalistics and to design a national certification program to determine if candidate practitioners meet these accepted minimum requirements. The target date for the submission of the peer group final work products to the CCSC is July 15, 1979.

The work products of the Peer Group Subcommittees will be reviewed by the CCSC for conformity to the guidelines set forth below. Following the review process, the subcommittees' recommendations will be used by the CCSC to assess the feasibility of a national certification program. The CCSC will construct a proposal on national certification incorporating the Peer Group proposals and submit the concept to the nationwide criminalistics community for approval, in the Fall of 1979.

The Peer Group Subcommittees should communicate with each other regularly during their deliberations and attempt to adopt similar approaches to the testing process. The Subcommittees are also asked to actively seek and accept input from the various regional groups represented on the CCSC and from non-represented segments of the forensic community.

In addressing their task, the Peer Group Subcommittees should bear in mind the following definitions adopted by the CCSC for the purposes of this study (Chicago, Sept. 1977):

Certification is a voluntary process of peer review whereby a practitioner is recognized as having accumulated the qualifications necessary to practice in one or more particular discipline of criminalistics. The objectives of certification are:

1. To set and measure levels of acceptable professional practice;
2. To guide professionals in attainment of accepted levels of competence;
3. To provide a means of evaluating the competence of practitioners;
4. To provide a formal process for recognition of practitioners who have met an accepted level of competence.

In establishing the minimum qualifications for eligibility, the Peer Groups should keep in mind the following criteria outlined by the CCSC (New Orleans, April 1978):

Is the proposed requirement fair? necessary? relevant?  
reasonable?

Does it realistically reflect current practice and would  
it be acceptable to the majority of practitioners?

The Peer Groups should consider the following types of qualifications in setting baseline requirements and should outline specific requirements in any of the categories which they deem important:

formal education	work experience
formal and informal on-the-job training	publications
court experience	professional activities
current practice	casework portfolio

In establishing the minimum qualifications, it may be helpful to use the following criterion: What are the baseline, minimum requirements in a crime laboratory for a person to be given responsibility to conduct this type of examination without immediate supervision and to be prepared to qualify and testify properly in court? The CCSC questionnaires also contain data on these points.

C. DETERMINE THE TYPE OF TEST(S) TO BE GIVEN AND PREPARE A SAMPLE EXAMINATION.

The CCSC has determined that both proficiency and written testing should be included in the certification process (Chicago, Sept. 1977). The applicant must meet the eligibility requirements established by each Peer Group prior to taking the examination(s).

The tests adopted must be economically feasible and capable of being administered and graded objectively and uniformly nationwide. The CCSC has suggested the following sequence of testing for the Peer groups to consider (Miami, Dec. 1977):

1. Written examination (a) containing objective questions on the specific subject matter of the discipline in question as well as (b) some questions fundamental to all categories of criminalistics (see below). Further testing of the candidate would be contingent on passing this written examination.
2. Proficiency test consisting of analysis and report by the applicant on simulated case material (analysis could be performed in applicant's laboratory, certified by lab director).
3. Written or oral presentation of proficiency test results including an in-depth explanation and justification of the methodology used, comparison standards, potential

interferences, reasons for using the method selected and the advantages and disadvantages of alternative approaches, evaluation of the significance of the results in the context of a hypothetical case situation. (Test could be given according to fixed national guidelines by trained peer examiners in local area)

In addition to testing specific knowledge in the discipline in question, the written examination must include questions in general areas, framed at a level appropriate to the type of evidence being examined. See the attached "List of Common Skills" adopted by the CCSC in Miami, Dec. 1977, for more detail. The areas which must be included in all examinations are:

1. Basic principles of identification and individualization
2. Scientific methodology
3. Evidence handling
4. Basic microscopy
5. Communication
6. Legal aspects and court testimony
7. Literature of criminalistics
8. General knowledge of criminalistics

In preparing the sample examination, it may be helpful to outline in detail the formal training (possibly including bibliography) necessary to prepare a candidate for the examination process, i.e., outline what he is expected to know and be able to do and what sources he must study to acquire these abilities. This outline would then suggest examination questions and could also serve as a training guide (SAFS publication is excellent guide to this approach).

D. DETERMINE THE LOGISTICS OF CONDUCTING AND ADMINISTERING THE PROPOSED CERTIFICATION PROGRAM.

The Subcommittees should consider (1) the potential cost of the proposed tests, (2) frequency and scope of recertification testing, and (3) ways to utilize the regional organizations and other sources of volunteer support in the testing process (e.g., making up proficiency test samples, conducting oral examinations). The CCSC has discussed the possibility of having one set examination fee, with smaller fees added for each additional examination. The Subcommittees should consider ways of combining several examinations to suit the applicants' needs and make the testing process more efficient and less costly.

# SPRING 1979 MEETING

## GETTYSBURG, PA

### PROGRAM & ABSTRACTS

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FRIDAY, APRIL 27th

9 AM to 12 Noon — Registration/Hospitality

11 AM — MAAFS Business Meeting

1 PM to 4:45 PM — Dual Technical Sessions

**SEROLOGY** chaired by Christine Tomsey of the Pennsylvania State Police Crime Lab.

1. **Recent Advances in Elution Technique** by Robert Gaensslen and Henry Lee of the University of New Haven.

2. **Fluorescence Derivatives in Presumptive Tests for Blood** by Peter DeForest of John Jay College, Robert Gaensslen and Henry Lee of the University of New Haven.

3. **Rare Variants in PGM and EAP encountered in Case Work** by Jeane Hostetler of the Montgomery County (Maryland) Crime Lab and Sharon Binkley of the Allegheny County (Pennsylvania) Crime Lab.

4. **Detection of Human Chorionic Gonadotropin (HCG)** by Alfred Lou-Beer of George Washington University.

5. **Isoenzyme Phenotyping in Hair Roots** by Frances Gdowski of the New Jersey State Police Crime Lab.

6. **Multisystem Analysis — A Variety of Approaches** by Robert Shaler of the New York City Medical Examiner's Office.

**SPECTROSCOPY** chaired by Michael A. Horvath of the Pennsylvania State Police Crime Lab.

1. **Microsampling in the IR** by Silvio C. Pattacini of Perkin-Elmer Corporation of Norwalk, CT.

I will discuss beam condensers, their uses, advantages and disadvantages. Separation techniques for obtaining IR spectra of micro fractions. Collecting fractions from a liquid chromatograph and the use of the Wick-Stick technique.

I will also talk on computer manipulation of IR data to obtain spectra of microsamples.

2. **Routine GC/IR identification of Drugs for the Forensic Laboratory** by Richard Saferstein, John J. Manura and Thomas A. Bretell of the New Jersey State Police Crime Lab at West Trenton, NJ.

With the ever-mounting volume of drug seizures and the increased complexity of drug mixtures, the forensic chemist is faced with an overwhelming work-load. Specific drug component identification is an essential requirement considering the consequences of convicting innocent suspects on the basis of erroneous scientific evidence. On the other hand, rapid and routine processing of samples is a practical necessity.

In this regard, a combined system including a gas chromatograph with an infrared spectrometer has always been alluring for forensic chemists since it offers an analytical technique that can achieve rapid separation of drug components, and, at the same time, provide for specific identification.

Combined GC/IR using the CIRA 101 for rapid separation of drug components and their specific identification has now been accomplished and will be reported on. The CIRA is a compact unit containing a conventional GC with an IR cell and is designed to fit into the sample compartment of any standard IR.

To demonstrate the effectiveness of GC/IR for solving forensic drug problems, the identification of a number of single and multiple component drug samples is described using the CIRA.

3. **Plasma Torch Spectroscopy** by James O'Grady of Jarrell Ash.

4. **Re-Identification of a Major Impurity in Illicit Amphetamine** by T. C. Kram of the DEA Special Testing and Research Lab, McLean, VA.

An impurity previously reported in illicit amphetamine as tri-(1-isopropylphenyl)amine has been found as a by-product in the synthesis of N-formyl-amphetamine, a reaction precursor to amphetamine via the Leuckart Synthesis. Its re-identification as di-(1-phenylisopropyl)formamide has been supported by combined spectroscopic analysis of chromatographic fractions isolated from the impure synthesis product.

Detection of this impurity in illicit amphetamine exhibits has been reported recently by other laboratories. Reconsideration of its initial identification is, therefore, in order.

5. **The Criminalistics Methods of Analysis Feasibility Study (CMAFS)** by Joan Gallo of the Forensic Sciences Foundation, Rockville, MD.

The Forensic Sciences Foundation was awarded a grant by the Law Enforcement Assistance Administration to study scientific methods currently in use in the nation's crime laboratories. The CMAFS will endeavor not only to compile methods currently in use, but to develop a procedure that will help evaluate laboratory methods.

A Methods Advisory Committee was chosen at the beginning of the project. This committee is composed primarily of individuals from the field of

criminalistics. It has a broad geographical base and includes members from academe, federal, state, county and Canadian scientific installations. The Foundation has held two Methods Advisory Committee meetings thus far, and at this point, methods are being compiled from committee members in the evidence categories: arson accelerants, blood, other body fluids, explosives, fibers, glass, gunshot residues, hair, paint and soil.

5 PM - Gettysburg National Battlefield Tour

8 PM - Smorgasbord Banquet

SATURDAY, APRIL 28th

8 AM to 10 AM - Buffet Breakfast

10:15 AM to 12 Noon - Dual Technical Sessions

**MICROSCOPY** chaired by John Reffner of American Cyanamide.

1. **Microscopic Examination of Fibers** by Robert Scott.

2. **Micro and Macro photography in Evidence Documentation** by Thomas Jensen of the Pennsylvania State Police Crime Lab.

3. **Microscopic Identification of Illicit Drug Diluents** by Robert Henderson of DEA NorthEast Regional Lab, New York, NY.

**CHROMATOGRAPHY** chaired by Michael A. Horvath of the Pennsylvania State Police Crime Lab.

1. **High Performance and Reversed Phase TLC** by Fredric M. Rabel of Whatman, Inc., of Clifton, NJ.

In addition to the classical silica gel TLC so widely used in laboratories around the world, new products have come into the market which allow greater limits of detection and speed. These are the HPTLC plates, high performance TLC made possible with 5 um silica rather than the usual 25 um silica. The secret to success with these is to spot very small quantities and to develop short distances.

Although not a new technique, reversed phase TLC was never popular because the plates had to be made by the chromatographer, and could not be made very reproducibly. With the advent of *bonded silica gels* and prepared plates, the technique is now widely used. It is a partition chromatographic system requiring only methanol/water combinations. Thus it is separating on the basis of solubilities and best works for separations of homologous series — chain length differences, number of rings, number of ring constituents — i.e., compounds with only slight polarity differences. Polar impurities usually migrate ahead of the compounds of interest. Techniques and examples of use of these TLC products will be shown and discussed.

2. **HPLC Column Selection** by Norman Parris of DuPont.

3. **Identification of Explosives** by Ron Peimer of BATF.

In 1976, DuPont discontinued the production of commercial dynamite and introduced a replacement called "water gel" with the brand name of *Tovex*. *Tovex*, and its competitors, are non-nitro-glycerin containing cap sensitive explosives. The gel explosives typically are packaged in a plastic sleeve and have the consistency of pudding.

Unlike ammonium nitrate—fuel oil (ANFO) the gel explosives are sensitive to detonation without a booster explosive. Three major explosive manufacturers have chosen alkyl amine nitrates in their formulations of gels to "sensitize" the mixture to blasting cap detonation. DuPont, Hercules and

blasting cap detonation. DuPont, Hercules and Gulf use monomethylamine nitrate, monoethanolamine nitrate and hexamine, respectively. Atlas employs perchlorate ion and aluminum.

Since the other gel components consist of commonly encountered explosive material and non distinctive compounds, it is the presence of the sensitizers that makes these products unique. Therefore, it is the purpose of this paper to demonstrate the techniques used to identify the particular sensitizers and, thereby, indicate the explosive and its manufacturer.

## THE EXHIBITORS

ARTHUR H. THOMAS COMPANY  
Philadelphia, PA

CHEMICAL DATA SYSTEMS, INC.  
Oxford, PA

E. LEITZ, INC.  
Rockleigh, NJ

KONTES  
Vineland, NJ

PERKIN-ELMER  
Newtown Square, PA

RESEARCH DEVICES, INC.  
Berkeley Heights, NJ

SADTLER RESEARCH LABORATORIES  
Philadelphia, PA

SUPELCO, INC.  
Bellefonte, PA

VARIAN/Instrument Division  
Florham Park, NJ

WATERS ASSOCIATES  
Milford, MA

WHATMAN INC.  
Clifton, NJ



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GOTTEN AROUND TO PAYING  
1979 DUES, HERE IS A . . .**

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TUIT**

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**"I'll do it as soon as I get a round tuit"**

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**A ROUND TUIT**

**Send dues to:**

**Jeane Hostetler**

**9890 Brookridge Court**

**Gaithersburg, Maryland 20670**