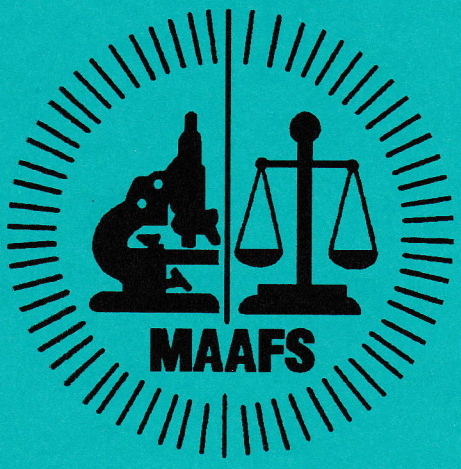
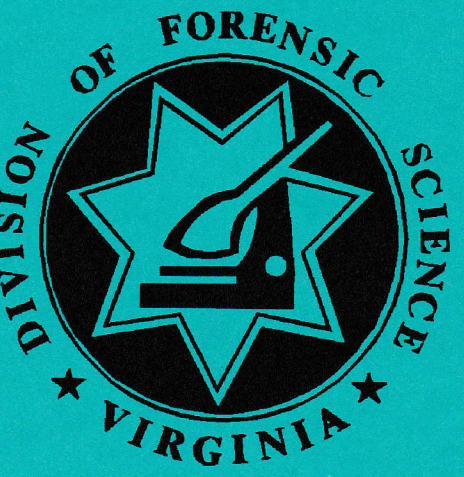
1997 Annual Meeting

MID-ATLANTIC ASSOCIATION OF FORENSIC SCIENTISTS





Co-sponsor
VIRGINIA DIVISION OF FORENSIC SCIENCE

April 29 - May 2, 1997
Clarion Hotel - Roanoke, VA

Hosted by The Western Laboratory of DFS

MAAFS Spring Meeting Agenda
Clarion Hotel, Roanoke, Va.

Tuesday, April 29,1997

8:00a	Registration for DNA session
8:30a - 5:00p	DNA Workshop (Ballroom A) "DNA Statistics Course" by Dr. Bruce Weir, North Carolina State University

Wednesday, April 30, 1997

10:00a - 3:00p	MAAFS registration (Lobby)
8:30a - 5:00p	DNA workshop (Ballroom A)
9:00a - 11:00a	Set-up for exhibitors (Commonwealth Room)
2:00p - 6:00p	ABC exam for general Knowledge, Fire debris, Drugs, Moderator: Karolyn Leclaire Tontarski
12:30a - 5:15	General Session (Ballroom C,D) Moderator: Chris Bryant, Va. DFS
12:30a - 12:45a	Opening remarks by Dr. Paul Ferrara, Director of Virginia Division of Forensic Science
12:45p - 1:45p	"Computer Forensics" by Howard Schmidt
1:45p - 2:30p	"Brambleton Ave Murder"- Det. Rick Moore, Det. Jeff Herrick of Roanoke Co. Police Dept.
2:30p - 3:00p	"Search and Seizure" by Officer Thor, Roanoke County K-9 Dept. Assisted by Officer John Hoover
3:00p - 3:15p	Break (Commonwealth Room)
3:15p - 4:15p	"Search Warrants" by Sheriff Reed Kelly, Botetourt Co. Sheriff's Dept.
4:15p - 4:45p	"Working with Experts Witnesses" by Tom Bondurant, US Attorney, Roanoke.
4:45p - 5:15p	"Computer Counterfeits" by Gordon Menzies, VaDFS
5:15p - 5:30p	Introduction to Division of Forensic Science's New Western Va laboratory by Steve Sigel
5:30p - 6:30p	Tour of Lab
1:00p - 5:00p	Exhibitors (Commonwealth Room)
6:00p - 7:30p	Hospitality room

Thursday, May 1, 1997

8:00a	MAAFS registration (Lobby)
8:00a - 5:00p	Exhibitors (Commonwealth Room)
8:30a - 12:00n	DNA workshop (Ballroom A)
8:30a - 12:00n	General session (Ballroom B,C,D) Moderator: Michael B. Mayo, Va DFS
8:30a - 9:50a	"Digital Imaging Overview for Law Enforcement" by Gordon Grow of Polaroid
9:50a - 10:05a	Break sponsored by JEOL, USA, Inc.
10:05a -12:00n	"Suspect Profiling" by Dr.Isaac VanPatten, PhD Clinical Psychologist and Radford University
12:00n - 1:00p	Lunch buffet (Alleghany Center-MAAFS registered only)
1:00p - 5:00p	TWGDAM (Ballroom A) Moderator: Lynnda Watson, Baltimore Co. Police, Forensic Services

1:00p-5:00p	Trace section(Ballroom B) Moderator: Sue Ballou,Montgomery Co.Lab
1:00p - 1:30p	"Wayne Williams Revisited" by Hal Deadman, George Washington University
1:30p - 2:00p	"Considerations for a Lab moving into the field of Gunshot Residue by Automated SEM/EDX" by Douglas H. DeGaetano, Va.DFS
2:00p - 5:00p	TWGMAT (Ballroom B) TWGMAT Introduction: Edward Bartick, TWGMAT Chair, A brief overview followed by guideline progress Panel discussion:"Techniques in the Trace Forensic Laboratory" Panel: Hal Deadman, George Washington University Max Houck, FBI Hairs and Fiber Unit Mary Tungol, FBI Ron Menold, II, FBI Open Discussion: Group participation concerning all presented topics
3:00p - 3:15p	Break (Commonwealth room)sponsored by Analtech
5:15p - 6:15p	MAAFS Business meeting (Ballroom B,C,D)
1:00p-5:00p	Chemistry section (Ballroom C)Moderator:Diane Catley, Va DFS
1:00p - 1:15p	"Detection of Drugs in Hair..Is the Hair Material Material?" by Charlie R. Midkiff, The American University.
1:15p - 1:45p	"Enantiomer Determination of Illicit Methamphetamine and Amphetamine Street Samples Using Cyclodextrin-modified Free Zone Capillary Electrophoresis" by Jerry Walker, DEA Washington
1:45p - 2:15p	"Identification of LSD on Single Blotter Tabs via GC/MS Using Electronic Pressure Controls(EPC) and Pulsed Split Injection" by Thomas M. Blackwell,DEA Midatlantic
2:15p - 2:45p	"Methcathinone: Chemistry and Clandestine Lab Synthesis" by Thomas P. Simpson, Va.DFS
2:45p - 3:00p	"Chemist Inconvenience Act" By Willie Kiser and Mike Mayo, Va. Division of Forensic Science
3:00p - 3:15p	Break (Commonwealth Room)sponsored by Analtech
3:15p - 3:45p	"Current Drugs Under Review by DEA" by Clyde Richardson, DEA Office of Diversion Control
3:45p - 5:00p	Discussion and presentations on "newer" Drugs including Ketamine,Gamma Hydroxbutrate,Tramadol, Butorphanol, Harmine, Nexus
5:15p- 6:15p	MAAFS Business Meeting (Ballroom B,C,D)
1:00p-3:45p	Document(Ballroom D)Moderator: Elizabeth James, FBI
1:00p - 1:15p	"Counterfeit Checks" by Kirsten Jackson, IRS Forensic Science Laboratory, Silver Spring, MD
1:15p - 1:30p	"One Crime, One Criminal, Three Different Confessions by Robert M. Black and Gerhard W. Wendt, Penn State Police.

1:30 - 2:00p	"Photogrammetry as a Means to Detect Photographic Deception " by Richard W. Vorder-Bruegge, FBI Washington
2:00p - 2:15p	"Brother Electronic Label Machine: Label Production, Ribbon Legibility and Identification" by Gordon Menzies, Va.Division of Forensic Science
2:15p - 2:30p	"A Forensic Application of Tape" by Tom Dewan, FBI Washington DC
2:30p - 2:45p	"Stamping Out Confusion: Proper Identification and Evaluation of US Postage Stamps" by Peter Belcastro, Jr. FBI, Washington
2:45p - 3:00p	"A Paper on the Flawed Report of Risinger, Denbeaux and Saks Criticizing the Forensic Science Discipline of Document Examination" by Renee L. Hazen, FBI Washington
3:00p - 3:15p	Break (Commonwealth room)sponsored by Analtech
3:15p - 3:30p	"Have You Seen This Title" by Debra Campbell, DC Metropolitan Police Dept., Washington DC.
3:30 - 3:45p (cancelled)	" After-Market Firing Pins'Effect Firing Pin Impressions" by Corey Turbeville, BATF
5:15p - 6:15p	MAAFS business meeting (Ballroom B,C,D)
6:15p - 7:30p	Hospitality room

Friday, May 2, 1997

8:00a - 12:00n	Exhibitors (Commonwealth Room)
8:30a-11:45a	Forensic biology and Latents (Ballroom A) Moderator:Elizabeth Bush
8:30a - 9:00a	"Fingerprint Patterns: What went wrong in the Collaborative Testing Service Latent Fingerprint Test" by Dr.Walter Rowe,George Washington Unv.
9:00a - 9:30a	Development and Validation of the AmpFISTR Profiler Kit by Sean Walsh, Perkin Elmer
9:30a - 10:00a	"The trials and Tribulations of Validating Chemiluminescence: Balancing the Gibco BRL Ladder" by Mary Dawson and Meredith Monroe, Maryland State Police Crime Lab.
10:00a - 10:15a	Break (Commonwealth room)
10:15a - 10:30a	"STR Validation Studies of Mixed Stains" by Amanda Blanchard, Virginia Commonwealth Univ.
10:30a - 10:45a	"Precision Study of STR Analysis of the FFFL Loci using the FMBIO-100 Fluorescent Imaging System" by Michelle Upshaw, Va.Commonwealth Univ
10:45a - 11:15a	"Automated Fluorescent Detection of STR Multiplexes-- The GENEPRINT POWERPLEX and FFFL MUTIPLEX Systems by James Schumm by Promega Corp
11:15a - 11:45a	"Did the Supreme Court in Daubert Adopt an Obsolete Model of Science" by Dr.Walter Rowe, The George Washington University, Washington,DC.

8:30a-12:45p	General Session (Ballroom B,C,D), Moderator: James Waller, Va DFS
8:30a - 9:00a	"An Automated Case Tracking System" by Wayne Adams, IBM
9:00a - 9:30a	Psychology of Testifying, by Dr. Lynwood Day, PhD Clinical Psychologist.
9:30a - 10:00a	"The Development and Assessment of a Copy Toner Spectral Database by Microscopical IR Analysis" by Edward Bartick, FBI
10:00a - 10:15a	Break (Commonwealth room)
10:15a - 11:15a	"Legal Updates" by Rick Conway, Prince William Commonwealth Attorney's Office
11:15a - 11:45a	"Spontaneous Leadership or If you can walk does that make you a mountain climber?" by Carrie Whitcomb, US Postal Service
11:45a - 12:15a	"Laboratory Waste Minimization", by Jim Mudd, REM, RHCMM, FBI
12:15a - 12:45a	"Utilization of the Internet for Health, Safety and the Environment" by David Eherts, Director of Health and Safety Rhone-Poulenc, Rorer.

Thanks to all the speakers who took their time and brought their knowledge and experience to share with us.

A special thanks to all who worked so hard to make this meeting come together.

Elizabeth Bush - Hospitality Suite
Pamela Cox - Registration,computer work
Harold Freed - Exhibitors, door prizes
Willie Kiser - Program, registration
Brenda Mason - Registration
Gordon Menzies - Internet, graphics and computer wizard
Vickie Miller - Annoucements, and computer work
All the moderators: Susan Ballou, Elizabeth Bush, Diane Catley, Elizabeth James, Micheal Mayo, Karolyn Tontarski, James Waller and Lynnda Watson.

Also a special thanks to Martin Hamilton of Fisher Scientific Company who donated all the registration packet freebies.

Hope everyone enjoyed Roanoke. Thanks for coming!- Chris Bryant

PRESENTER INDEX

MAAFS SPRING 1997 AGENDA

DNA WORKSHOP

Tuesday, April 29, 1997

8:00-8:30 a.m. **Registration**

8:30 a.m.-5:00 p.m. **DNA Workshop**

Wednesday, April 30, 1997

8:30 a.m.-5:00 p.m. **DNA Workshop**

Thursday, May 1, 1997

8:30 a.m.-noon **DNA Workshop**

1:00 p.m.-5:00 p.m. **TWGDAM**

FORENSIC BIOLOGY AND LATENTS SESSION

Friday, May 2, 1997

Morning

8:30-9:00 **Identical Twin Fingerprint Patterns: What Went Wrong in Collaborative Testing Services Latent Fingerprint Proficiency Test--by Walter F. Rowe, PhD, Department of Forensic Sciences, The George Washington University**

In a recent proficiency test of latent fingerprint examiners photographs of seven visible or patent fingerprints in blood were sent along with four ten-finger fingerprint cards to 228 forensic science laboratories. This test was a part of the forensic proficiency testing program conducted by Collaborative Testing Services, Inc., of McLean, Virginia, under the aegis of the American Society of Crime Laboratory Directors. One hundred and fifty-six of the participants responded. Misidentification rates for the seven fingerprints ranged from 2% to 29%. A critical examination of the results

of this proficiency test reveals that the highest misidentification rates (29% and 6%) were found for fingerprints made by a twin brother of one of the subjects whose fingerprint card was provided to the examiners. It has been well known for over half a century that the fingerprint patterns of identical twin are very similar. In fact, prior to the advent of DNA profiling fingerprint features such as ridge counts on loops were used to determine the probability that two siblings were identical twins. This paper will discuss the literature on identical twin fingerprints and suggest some of the pitfalls latent fingerprint examiners might confront in proficiency test were attributable to just two of the respondent laboratories. This suggests a need for better training for some latent fingerprint examiners.

9:00-9:30 **<u>Development and Validation of the AmpFlSTR Profiler Kit</u>--by Sean Walsh, Perkin Elmer Applied Bioscience**

A highly discriminating co-amplified STR system has been developed by scientists at PE Applied Biosystems. The new AmpFlSTR Profiler PCR Amplification Kit coamplifies 9 STR loci and amelogenin in a single PCR. Amplitaq Gold DNA polymerase has been incorporated into the amplification to provide improved specificity. All 10 PCR amplification products can subsequently be detected in a single lane of an ABI PRISM 377 DNA Sequencing gel or in a single injection on an ABI PRISM 310 capillary electrophoresis instrument. The primers have been labeled with three dfferent dyes which allows multiple loci to be analyzed in a single lane, even when they have overlapping size ranges. Additionally, an in-lane size standard in a fourth color can be simultaneously run in the same lane to provide fragment sizing information and to correct for gel migration differences.

The development studies of the AmpFlSTR Profiler kit will be discussed, including optimization studies of PCR reagent components, thermal cycling parameters, and sequencing results.

In addition, results from our Technical Working Group on DNA Analysis Methods validation studies will be described.

9:30-10:00 **<u>The Trials and Tribulations of Validating Chemiluminescence: Balancing the Gibco BRL Ladder</u>--by Mary Dawson and Meredith Monroe, Maryland State Police Crime Laboratory, Pikesville, Md**

For the past year, we have been validating the chemiluminescence procedure for RFLP analysis in our laboratory. We have encountered difficulties with

the resolution of the ladder bands, the differing intensities of the ladder bands, and the determination of the final concentration necessary. The following studies were taken to try to resolve these problems:

1. **Gibco BRL vs. Cellmark ladder probe and products**
2. **The effect of new vs. old TAE buffer**
3. **The effects of ethidium bromide in the gels and buffer**
4. **DNA Typing Grade vs. IDNA agarose**
5. **Varying the concentration of the ladder**

In addition, presentations will be made on studies with the reusing of hybridization solution, microwaving for Hae-III restriction, adenovirus detection, and various modifications of our own protocol that may be of interest to the forensic community.

10:00-10:15 **Break**

10:15-10:30 **STR Validation Studies of Mixed Stains--by Amanda Blanchard, Virginia Commonwealth University, Richmond, Va**

Short Tandem Repeat (STR) validation studies have become an integral part of forensic research in the implementation of new DNA systems on forensic casework samples. Mixed stains propose unique obstacles within sample preparation and typing analysis. To address this, emphasis has been placed on the ability to distinguish typing of sperm cells from epithelial cells. The occurrence of stutter bands, artifacts, preferential amplification and allelic drop out can also create complications in genetic typing. Therefore, it is imperative that interpretation guidelines be established.

In this study, mixed stains from five samples were extracted, amplified and typed using the Gene Print (TM) FFFL Fluorescent STR Typing Kit (Promega). A variety of dilutions were analyzed in order to determine the concentration at which a weak minor component would have the same intensity as a stutter band. The gels were visualized using an FMBIO-100 Fluorescent Imaging System. Peak areas and heights were calculated for all alleles at each locus in order to determine an empirical value used to differentiate between a real band and a stutter band. This study, in addition to the studies being conducted in conjunction wwith the FBI STR Standardization Project, will enable the analyst to establish criteria for determining when a weak allele will be classified as a stutter band versus a weak interpretable allele.

10:30-10:45 **Precision Study of STR Analysis of the FFFL Loci Using the FMBIO-100 Fluorescent Imaging System--by Michelle Upshaw, BS[1], Barbara E.**

Llewellyn, MS, MS[2], Jeff D. Ban, BS[2], [1]Virginia Commonwealth University, [2]Virginia Division of Forensic Science, Richmond, Virginia

The Hitachi FMBIO-100 Fluorescent Imaging System is a high volume analysis instrument designed to scan electrophoretic gels using a solid state green laser. The laser detects differing wavelengths of light which are emitted from fluorescently tagged DNA in the gel. The fluorescent signal that is emitted is analyzed using a Macintosh computer with specialized software, which enables the analyst to size the bands and thus determine a DNA profile for the sample.

Short tandem repeat (STR) analysis using the polymerase chain reaction (PCR) with fluorescent detection systems is gaining in popularity, in part due to the safety, sensitivity, speed, and accuracy associated with these methods. It is important to validate the precision of the instrument before it is used for casework analyses. Therefore, an experiment was designed to test the precision of the FMBIO-100 Fluorescent Imaging System.

Five (5) known blood samples were extracted, purified, and amplified using the GenePrint™ FFFL Fluorescent STR System Kit (Promega). Each amplified product was electrophoresed on a Gel-Mix 6 (Gibco/BRL) acrylamide gel using a SA32 electrophoresis unit (Gibco/BRL). Twenty (20) individual amplifications and gels were run. The gels were scanned on the FMBIO-100 and analyzed on the Macintosh computer using the FMBIO analysis software. The results of the precision study will be presented here.

Cancelled (Subpoena)

<u>Alternate Light Source--A Replacement for Luminol?</u>--by Lisa C. Schiermeier, Virginia Division of Forensic Science

Luminol has historically been used for detecting traces of blood in the absence of visual stains. A positive luminol test is not a confirmatory test for blood, but only indicates the possible presence of blood which can lead scientists to perform further tests for blood identification. Although luminol is a useful tool for screening large areas for traces of blood, it can have detrimental effects on probative stains as well. When used incorrectly, luminol can dilute stains to such a degree that further testing is not possible and potential patterns may be obscured. Additionally, luminol is subject to many false positive reactions due to rust, metal salts, and cleaning detergents. Probably the most common false positive reaction is due to luminol reacting to itself when puddling occurs as a result of improper application technique.

The Central Laboratory of the Virginia Division of Forensic Science has seen

an increase in requests from investigators for luminol to be used at crime scenes where no blood is visible. However, using luminol to successfully locate stains is not only subject to the limitations of luminol itself, but to experience with the technique as well. Investigators use luminol infrequently, and readily admit that they do not feel comfortable when they use it. Informal training sessions for investigators conducted by Forensic Biology Section examiners concurrent with or prior to issuing the luminol are not enough to overcome the investigators' discomfort.

In light of this situation, VA DFS Forensic Biology section is evaluating use of alternate light sources as an alternative method to the use of luminol. Alternate light sources, such as the Omnichrome FLS 5000 and the Luma-Lite 2000, are instruments capable of producing light at wavelengths which can detect biological fluids. Since iron bound to hemoglobin in blood is also known to be enhanced by light of a particular wavelength, these instruments may serve as an alternative to using luminol.

VA DFS compared the two methods to see if the results obtained by scanning a suspected area waith an alternate light source would be as sensitive as the application of luminol. Bloodstains on various substrates were subjected to typical methods of concealment. The resulting stains were then viewed with the Omnichrome FLS 5000 and Luma-Lite 2000, and finally sprayed with luminol. The data from the study will be presented, along with conclusions.

10:45-11:15 Automated Fluorescent Detection of STR Multiplexes--The **GENEPRINT POWERPLEX** and **FFFL MULTIPLEX** Systems--by James W. Schumm, Promega Corp.

The era of databasing criminal populations to link suspects to crime scenes and crime scenes to one another by evidence comparison is upon us. To achieve the ultimate benefit of this approach, hundreds of thousands to millions of individuals, primarily convicted criminals, will be typed using STR systems. The enormous labor involved with this effort can be minimized by using multiplex STR systems wahich are detected using semi-automated data collection instruments.

We have developed three fluorescein-labeled STR quadirplex systems each with the following properties:

* Within each quadriplex, no alleles of one STR locus overlap in size with alleles of another locus.
* Fluorescent allelic ladders for each locus have been developed.
* All loci except vWA are simple STR systems. Microvariants have been observed with only two of the twelve loci (i.e. TH01 allele 9.3, TH01

allele 8.3, F13A01 allele 3.2).

- **Each system is compatible for use with the following instruments:**
  - **Hitachi FMBIO and FMBIO II Fluorescent Scanners**
  - **Molecular Dynamics FluorImager SI and 595 Fluorescent Scanners**
  - **Applied Biosystems Model 310 Capillary Electrophoresis Unit**
  - **GenomyxSC Fluorescent Scanner**

This combination of reagents and instrumentation provides the necessary ingredients to achieve the throughput and efficiency which will be required to generate large population databases. Characteristics of the multiplex systems and the detection equipment will be discussed.

11:15-11:45 **Did the Supreme Court in Daubert Adopt an Obsolete Model of Science?--by Walter F. Rowe, The George Washington University, Washington, DC**

In Daubert et al. v. Merrell Dow Pharmaceuticals, Inc. (113 SCt 2786) the Supreme Court ruled that the Frye Rule had been superseded by Rule 702 of the Federal Rules of Evidence. In place of the Frye Rule's single criterion of general acceptability the Supreme Court suggested four criteria that judges could use to determine whether testimony should admitted as scientific evidence:

1. Can the theory or technique be tested? Has it been so tested?

2. Has the theory or technique been subjected to peer review and been published?

3. What is the known or potential rate of error?

4. Has the theory or technique gained general acceptance?

In formulating the first criterion the Court relied explicitly on the concept of falsifiability originally proposed by Karl Popper as a criterion for the demarcation of science from non-science. (1, 2) Popper's central idea was that experiments could not prove a theory to be true but experiments could prove a theory to be false. Popper believed his falsifiability concept both described how science is actually done and prescribed how it should be done. Historians of science have shown that no significant scientific theory has developed according to Popper's paradigm. (3) Philosophers of science have demonstrated that the claim that a scientific theory can be definitively shown to be false has the same logical flaw as the claim that theories can be verified by experiment. Consequently, falsifiability has little utility as a criterion of

demarcation between science and non-science.(3-5)

Even if a theory passes the hurdle of testability it may still be regarded by scientists as lacking in credibility. Four factors normally examined by scientists in assessing the credibility of a scientific hypothesis: (a) the quantity, variety and precision of the supporting evidence; (b) confirmation by "new" experimental results (i.e. other than those used in the development of the hypothesis); (c) theoretical support from well-established scientific laws and (d) the simplicity of the theory. (6)

The Supreme Court in *Daubert* also ignored the evolutionary development of scientific theories. Most scientists are aware that theories go through a series of steps before they reach the point of being considered generally reliable. Henry H. Bauer has described these steps in his book *Scientific Literacy and the Myth of the Scientific Method.*(7) A hypothesis is constructed from the universe of human traits (conventional wisdom, wild ideas, attributes of personality). At this point the hypothesis may be rejected out of hand as being nonsensical or pseudoscientific (using the criteria of Hempel, discussed above). If the hypothesis survives this step it will probably be tested by some quick-and-dirty experiments. This is the domain of frontier science. If the initial experiments are promising more formal, cleaner experiments will be tried. If these further experiments are successful the hypothesis will probably be published in what may be termed the primary scientific literature. The hypotheses appearing in the primary literature can be characterized as "not obviously wrong" and "possibly right." Once other scientists become aware of the hypothesis they will conduct their own tests and publish the result. The results of these replicate tests are a part of the secondary scientific literature (which also includes monographs and review articles). The secondary literature contains mostly reliable hypotheses. Beyond this point the hypothesis is used over a period of time and its agreement with well-established theories from the same field of science and related scientific disciplines is assessed. Hypotheses that still survive pass into textbooks. Textbook knowledge consists of mostly very reliable hypotheses. Textbook scientific knowledge should be admitted into courts; scientific hypotheses that are in the primary literature stage probably should not.

GENERAL SESSION

Wednesday, April 30, 1997

10:00 a.m.-3:00 p.m. MAAFS Registration

Afternoon

12:30-12:45 **Opening Remarks--by Paul Ferrara, PhD, Director of Virginia Division of Forensic Science**

12:45-1:45 **Computer Forensics--by Howard Schmidt**

1:45-2:30 **Brambleton Avenue Murder--by Rick Moore and Jeff Herrick, Roanoke County Police Department, Roanoke, Va.**

2:30-3:00 **Search and Siezure--by Officer Thor, Roanoke County K-9 Dept., assisted by Officer John Hoover**

3:00-3:15 **Break**

3:15-4:15 **Search Warrants--by Reed Kelly, Sheriff, Botetourt County, Va**

4:15-4:45 **Working With Expert Witnesses--by Tom Bondurant, US Attorney, Roanoke**

4:45-5:15 **Computer Counterfeits--by Gordon Menzies, Virginia Division of Forensic Science**

5:15-5:30 **Introduction To Virginia Division of Forensic Science's Western Laboratory--by Steve Sigel, Virginia Division of Forensic Science,**

5:30-6:30 **Tour of DFS Western Laboratory**

6:00-7:30 **Hospitality Room (Room #6)**

Thursday, May 1, 1997

8:00 a.m.-noon **MAAFS Registration**

Morning

8:30-9:50 **Digital Imaging Overview for Law Enforcement--by Gordon Grow, Polaroid Corporation**

Differences between the analog of traditional image and the digital image, steps in the digital imaging cycle, basic requirements for setting up a digital darkroom, limitations of digital imaging, and 'hybrid' digital solutions will be

presented.

9:50-10:05 Break

10:05-12:00 Suspect Profiling--by Isaac VanPatten, PhD

The use of psychological profiling, or criminal investigative analysis as it is now called, is not something new in law enforcement. As any fan of Sir Arthur Conan Doyle (and his prototypical detective Sherlock Holmes) knows, the fundamentals of determining who might have committed a crime by analyzing crime scene data has been around as long as there has been detectives. However, in the past twenty years, the art and science of criminal investigative analysis (CIA) has experienced considerable development and refinement. Led by the FBI's Behavioral Sciences Unit and the National Center for the Analysis of Violent Crime, and continued by the Child Abduction and Serial Killer Unit and the Profiling and Behavioral Assessment Unit, CIA finds applications in sex crimes, bombings, celebrity stalking, and, of course, serial homicide investigations. This presentation will provide an overview of the principles of CIA, and the various uses to which it is put by the law enforcement community. In addition, an overview of the exciting and promising new techniques of Geographic Profiling will be presented.

Afternoon

12:00-1:00 Lunch Buffet

5:15-6:15 MAAFS Business Meeting

6:30-7:30 Hospitality Room

(General Session Agenda Continued Following the Questioned Documents and Firearms Session Agenda)

TRACE SECTION

Thursday, May 1, 1997
Afternoon

1:00-1:30 **Wayne Williams Revisited -- by Hal Deadman, George Washington University, Washington, DC**

Fiber evidence is used by a crime laboratory to associate or link together people and/or objects. When there is contact between any two objects, there will almost always be some type of detectable transfer of material between these two objects. This is called the exchange principle and is the basis for the analysis of all types of trace evidence. Since all people are closely associated with items containing fibrous materials, in their houses and automobiles and on their person, the transfer of textile fibers comes into play in many different types of criminal activity, especially in crimes of violence.

The Wayne Williams case involved the investigation of a large number of murdered black children or young black men in the Atlanta, Georgia, metropolitan area between July, 1979 and May, 1981. Associations based on textile fiber evidence were an essential part of the case developed against Williams and was the most compelling evidence of his involvement in the murders that was presented at his trial. The fiber evidence demonstrated an extremely strong and recent linkage between the surroundings of Williams and the bodies of eleven murder victims. It has been 15 years since the Wayne Williams trial and I believe it would be interesting to look at the field of forensic fiber analysis fifteen years after the Williams case. This paper will present a summary of the fiber evidence developed and presented in the Williams case and will attempt to address the following questions: Has there been an increase in the use of fiber evidence in the courtroom? Have there been improvements and advances in the analysis and evaluation of textile fiber evidence in the past fifteen years? Have improved methods been developed to collect and handle trace evidence? Has there been any impact of DNA testing and the extensive and seemingly never-ending DNA court battles on forensic fiber analysis? Have new methods been developed to assess the evidential value of forensic fiber evidence? Will the new admissibility standard in the Unite States Federal courts, the Daubert standard, have any impact of the use of fiber evidence in the courtroom? How do fiber comparisons and other forensic exams that are not generally conducted outside a crime laboratory fare in the court? Has there been an increase in the use of defense experts testifying against fiber evidence? Finally, the defense attacks against the forensic evidence in the Williams case will be compared to the current defense attacks on various types of forensic evidence.

1:30-2:00 **Considerations for a Laboratory moving into the field of Gunshot Residue by Automated SEM/EDX -- by Douglas H. DeGaetano, M.S., Virginia**

Division of Forensic Science, Richmond, Va.

The number of Forensic Laboratories using automated Scanning Electron Microscopy and Energy Dispersive X-Ray (SEM/EDX) for the analysis of gunshot residue has increased over the past ten years. This is, no doubt, due in part to an increase in the number of manufacturers offering this equipment and the introduction of a more affordable instrument by the R. J. Lee Group, Inc. The author has been involved in the setup and operation of two different automated SEM/EDX systems; one in the private sector and one with the Virginia Division of Forensic Science. A number of practical considerations will be addressed with regard to a laboratory moving into this area of analysis. Topics to be discussed include: the probative value of the analysis, caseload requirements, sample volume and speed capabilities for various instruments, compatibility of SEM and EDX systems, manufacturers' demos, sample collection and analysis techniques.

2:00-5:00 **TWGMAT**

TWGMAT Introduction--by Edward Bartick

A brief overview followed by guideline progress

Panel Discussion--by Hal Deadman, George Washington University, Max Houck, FBI Hairs and Fiber Unit, Don McClamroch, ATF, and Mary Tungol, FBI

3:00-3:15 **Break**

Open Discussion-- Group participation concerning all presented topics

5:15-6:15 **MAAFS Business Meeting**

6:30-7:30 **Hospitality Room (Room #6)**

DRUG CHEMISTRY SECTION

Thursday, May 1, 1997
Afternoon

1:00-1:15 **Detection of Drugs in Hair--Is the Hair Material Material?--by Charles R. Midkiff, Department of Justice, Law and Society, The American University, Washington, DC 20016**

Testing for drugs in hair offers a number of advantages over the more widely used urine tests. Hair samples are less intrusive to collect, have a long shelf life so are easily retained for retesting if needed and resist attempts at alteration by the subject. In addition, hair monitors drug use over months rather than the days typical of urine tests. The ability of hair to retain drugs has been known for over 30 years but interest in and use of testing for drugs in hair grew rapidly in the 1980s. Increasing use of hair testing is being made in employment screening and drug rehabilitation programs and hair test results have withstood both *Frye* and *Daubert* type challenges in court. Nevertheless, several years ago, a question was raised regarding the potential for racial or ethnic bias in the results of hair tests. Highly pigmented hairs contain high levels of melanin. It has been demonstrated that melanin can bind tightly to a variety of compounds including commonly abused drugs. Given comparable drug intake, this binding could enhance drug retention in an individual with highly pigmented hair compared to that in one whose hair has limited pigmentation. This prospect has led to debate in the forensic community regarding the fairness of test results showing drug levels in hair. Although results from recently reported studies have attracted attention, closer examination shows them to be less than clearcut. These studies will be examined in an attempt to untangle the issue of the materiality of materials in hair on drug test results.

1:15-1:45 **<u>Enantiomer Determination of Illicit Methamphetamine and Amphetamine Street Samples Using Cyclodextrin-Modified Free Zone Capillary Electrophoresis</u>--by Jerry A Walker, B.S.* and Henry L. Marché, M.S. Drug Enforcement Administration- MidAtlantic Laboratory**

This paper's objective is to demonstrate a "dilute and shoot" method capable of simultaneously determining the enantiomer of illicit methamphetamine and amphetamine street samples in less than ten minutes.

This paper presents a simple method for the isomer identification of illicit methamphetamine and amphetamine street samples using cyclodextrin-modified free zone capillary electrophoresis. The method allows for the baseline separation of the isomers of methamphetamine, amphetamine, ephedrine, pseudoephedrine and phenylpropanolamine in less than ten minutes. The run buffer is prepared by dissolving 30 mmol hydroxy propyl β-cyclodextrin into 200 mmol sodium phosphate. Samples are diluted with the 200 mmol sodium phosphate and injected directly onto a 46-cm fused silica capillary. Isomer elution times are shown to be discernable and reproducible. Common adulterants, diluents and impurities do not interfere

with the analysis.

1:45-2:15 **<u>Identification of LSD on Single Blotter Tabs Via GC/MS Using Electronic Pressure Controls (EPC) And Pulsed Split Injection</u>--by Thomas M. Blackwell, Drug Enforcement Administration, Mid-Atlantic Laboratory,**

Single blotter tab exhibits of Lysergic Acid Diethylamide (LSD) are frequently encountered in forensic laboratories. The positive identification of LSD can be difficult and time consuming, unless the tabs are of a significant strength. Capillary gas chromatography has been used in the identification and quantitation of LSD and the differentiation of LSD from lysergic acid methylpropylamide (LAMPA). Identification of LSD by gas chromatography and mass spectrometry (GC/MS) has involved the use of derivatives, special columns (short), drastic changes in normal gas chromatograph (GC) operating conditions, or special equipment such as the direct insertion probe. Direct insertion probe (DIP) has been the preferred mass spectrometer method when dealing with small single tab amounts of LSD at the Drug Enforcement Administration's (DEA) Mid-Atlantic Laboratory. The use of DIP minimizes the GC oven ramifications and avoids column adsorption formation of artifacts.

The relatively recent development of a variety of capillary columns, improved mass spectrometry sensitivity, and gas chromatographs equipped with electronic pressure controls, have allowed for the GC/MS identification of a single blotter tab of LSD.

The prescribed methodology employs a longer GC/MS column (>25 meters) without the need for special extractions, temperatures, or derivitizations. Two important considerations for adequate column transfer of weaker samples, are splitliner vapor expansion volume and flow rate. Because both can be changed by changing inlet pressure, EPC provides a way to optimize conditions for sample introduction. Increasing column head pressure briefly at the time of injection helps control expansion volume and improve transfer of solutes to the column. This is referred to as a "pressure pulse" or a pulsed split injection. Analysis time is greatly reduced, by using a pulsed split injection and computer software based pressure programs versus conventional oven programs.

2:15-2:45 **<u>Methcathinone: Chemistry and Clandestine Synthesis</u>--by Thomas P.**

Simpson, Division of Forensic Sciences, Roanoke, Va.

An operating clandestine laboratory was seized which was reportedly producing "meth". Rather than methamphetamine (Schedule II), the product turned out to be methcathinone (Schedule I). Ephedrine (or pseudoephedrine) is the starting material for both methamphetamine (via reduction) and methcathinone (via oxidation). The clandestine synthesis and chemistry of methcathinone will be reviewed.

Information seized from the clandestine laboratory indicated that the Internet may have been utilized as a source of information on methcathinone synthesis. This medium will be examined for its relevance to the forensic chemist.

2:45-3:00 **The Chemist Inconvenience Act of 1997--by Wilmer O. Kiser and Michael B. Mayo, Virginia Division of Forensic Science, Roanoke, Va**

A humorous look at some desirable (?) legislation.

3:00-3:15 **Break**

3:15-3:45 **Current Drugs Under Review by DEA--by Clyde Richardson, Drug Enforcement Administration, Drug and Chemical Evaluation Section (ODE)**

- Conducting comprehensive drug reviews to determine if a drug should be added, removed or transferred from the schedules of the federal Controlled Substances Act (CSA).

- Conducting reviews of chemicals used in the clandestine production of illicit drugs for possible regulation under the Chemical Diversion and Trafficking Act

- Setting production quotas for Schedules I and II controlled substances

- Reviewing pharmaceutical preparations to determine if they qualify for status as an exempted product

- Providing reports to the United Nations on controlled substances

- Providing scientific information to the World Health Organization on drugs covered by international U.S. treaty obligations

This presentation will discuss the drugs currently under review by ODE and the status of the reviews.

3:45-5:00 **General discussions and 'from the floor' presentations on drugs such as Ketamine (Special K), Gamma Hydroxy Butyrate (GHB), Tramadol, Butorphanol, Harmine, Nexus, etc.**

5:15-6:15 **MAAFS Business Meeting**

6:30-7:30 **Hospitality Room (Room #6)**

QUESTIONED DOCUMENTS AND FIREARMS SECTION

Thursday, May 1, 1997

Afternoon

1:00-1:15 **Counterfeit Checks--by Kirsten S. Jackson, IRS Forensic Science Laboratory**

1:15-1:30 **One Crime, One Criminal, Three Different Confessions--by Robert M. Black and Gerhard W. Wendt, Pennsylvania State Police, Questioned Documents Section, Harrisburg, Pa 17110**

A case study involving three seperate letters of confession signed by different writers and allegedly forged by the jailed suspect in the brutal rape of a State Trooper's daughter. Following his own preliminary "examination" of the document evidence, the investigator strongly believed the letters were written by the defendant and related this in his request for analysis. The case took an interesting turn as the defendant could not be established as being the writer. Subsequent investigation and examination revealed the defendant had written three "model" confessions which he gave to other inmates to copy for sending to authorities. The case is described in detail from the

submission of the documents evidence to the examination and subsequent guilty pleas of the defendant.

1:30-2:00 **<u>Photogrammetry as a Means to Detect Photographic Deception</u>--by Douglas A. Goodin AA BA MPP MFS, Richard W. Vorder-Bruegge PhD, Room 3449, 935 Pennsylvania Ave. NW, Washington, DC 20535**

This paper examines photogrammetric analysis as a technique for detecting altered or retouched photographs or electronic images.

With the increasing use of electronic imaging, and image retouching through the use of computers, image integrity may come under greater scrutiny by forensic scientists and the legal system. Photogrammetry may aid in establishing an image's veracity. Photogrammetry is the science of deriving actual measurements from objects portrayed in two dimensional images. This involves establishing the perspective triangle of an image so that the dimensions of known objects may be compared by ratio to objects whose dimensions are unknown. Sets of parallel lines in the image are followed to their vanishing points, which form the three angles of the perspective triangle. In addition to this perspective triangle, the camera station, or where the camera was located in actual space when the image was made, is established. The camera station and perspective triangle of an image may provide clues to the possible retouching or combining of images. All objects with parallel lines depicted in an image should vanish to the same horizon line. An object "retouched," or "airbrushed," into the original image may have parallel lines that do not vanish to the established horizon line. If these lines do not vanish to the establish horizon line, it may indicate that there is more than one camera station for what is being represented as a valid, unmolested image. If a questioned object has another camera station (in addition to the one established for the overall image), this may indicate that more than one image has been combined to form the questioned image. If the objects depicted in the image do not have parallel lines that easily allow the establishment of vanishing points, then camera station may be established through the photogrammetric technique known as "Reverse Projection." This technique involves placing a 1:1 copy (positive or negative) of the image in the prism of a single lens reflex camera. Viewing through the camera, the objects in the image are aligned with the same natural (or same type) objects in actual space. If all of the image aligns with the actual objects, then there would appear to be only one camera station. However if a component of the image has a significantly higher, lower, or laterally moved camera station, it may have been added to the questioned image.

2:00-2:15 **Brother Electronic Label Machine: Label Production, Ribbon Legibility, and Identification--by Gordon C. Menzies, Jr., Virginia Division of Forensic Science, Roanoke, Va**

A description of the process used by the Brother Electronic Label Machine to produce labels, a description of reading the ribbon, and a method of identifying the product from a specific ribbon.

2:15-2:30 **A Forensic Application of Tape--by Thomas Dewan, FBI Laboratory, Washington, DC**

Experiments with various forms of pressure sensitive evidence tape and latent lift tape reveals the possibility of their usefulness in forensic examinations of obliaterated or overwritten writing, typewriting, etc. The delayed adhesion features of some of the tape may allow an inexpensive and non-destructive supplement to infrared and ultraviolet analysis systems currently in use.

2:30-2:45 **Stamping Out Confusion: Proper Identification and Evaluation of U.S. Postage Stamps--by Peter J. Belcastro, Jr., FBI Laboratory, Questioned Documents Unit, Washington, DC**

An overview of the forensic examination of U.S. Postage Stamps, focusing on proper identification and evaluation of gum type, format and nomenclature, recognition of common problem areas associated with this type of examination, and avoiding these pitfalls with the use of proper scientific method in conjunction with standards or reference materials. Brief discussion of valuable investigative information that can be extracted from some U.S. Postage Stamps.

2:45-3:00 **A Paper on the Flawed Report of Risinger, Benbeaux, and Saks Criticizing the Forensic Science Discipline of Document Examination--by Renee L. Hazen, FBI Laboratory, Questioned Documents Unit, Washington, DC**

1. **The qualifications of the authors within the field of document examination.**

2. **Whether these authors are the best judges to ascertain the reliability of document examination?**

3. An analysis of the studies cited within the Pennsylvania Law Review article and how the results of these studies have been used to support the authors' severe criticism of the field.

4. A brief synopsis of court cases in which these authors have testified as critics of the reliability and validity of the field and the effect on the admissibility of document examination evidence and testimony as a result.

5. The response of the document examination community and what needs to be done in the future to respond to this criticism.

3:00-3:15 Break

3:15-3:30 Have You Seen This Title?--by Debra F. Campbell, Metropolitan Police Department, Washington, DC

This paper's purpose is to alert any document examiner to the appearance of these titles in the Mid-Atlantic area. My examination was solely for the purpose of the handwriting and hand printing on the Application for a Certificate of Title for a Motor Vehicle or Trailer, District of Columbia, Department of Public Works, Bureau of Motor Vehicles Services and the State of New Jersey, Division of Motor Vehicles, Certificate of Title.

While the handwriting was inconclusive the amount of information on the New Jersey Title is invaluable for investigative purposes.

Cancelled An After-Market Firing Pin's Effects on Firing Pin Impressions--by Corey Turbeville and Rick Register, Bureau of Alcohol, Tobacco, and Firearms, Forensic Science Laboratory, Rockville, Maryland

The use of after-market products for firearms can have a significant effect on firearm examinations. One such example pertains to the changes in class and individual characteristics associated with the use of an after-market firing pin produced by "Lightning Strike" Inc. for large and small-framed Glock firearms. Changes in firing pin marks were consistently found in all tests done in two (2) different caliber groups. The changes consisted of class characteristics (firing pin drag marks) no longer being found on the cartridge cases after the Glock firing pins were replaced with the after-market strikers. As a consequence, the individual features often found in the firing pin drag mark, which are relied upon for identifications, were also missing. The Lightning Strike firing pins, however, did impart their own class and individual characteristics. The consistent changes observed in

Glock-type firing pin marks could provide examiners an opportunity to conclude such changes are indicative of a specific products' usage. In future examinations, such information could have important consequences for criminal investigations involving firearm examinations.

5:15-6:15 **Break**

6:30-7:30 **Hospitality Room (Room #6)**

GENERAL SESSION

Friday, May 2, 1997

Morning

8:30-9:00 **LIMS Considerations--by Wayne R. Adams, IBM Corp.**

There are many approaches to implementing a Laboratory Information Management System. This talk discusses the considerations of implementing a LIMS with regard to the major functions required for a forensic science lab.

9:00-9:30 **The Psychology of Testifying--by Lynwood Day, PhD**

9:30-10:00 **The Development and Assessment of a Copy Toner Spectral Database by Microscopical IR Analysis--by Edward G. Bartick, Forensic Science Research and Training Center, FBI Academy**

This paper describes the development and assessment of a copy toner library used for the forensic examination of questioned copied documents. The library was acquired by infrared (IR) spectral analysis. The use of the library allows examiners to identify the chemical type of toner and to categorize the toner in a group of potential machines which use an original equipment manufactured (OEM) cartridge. The toners are used in copiers, printers, and facsimile machines.

Various machines use specific toners for the copier engines. Several machine models and manufacturers could use the same engines. Therefore, an examiner is not likely to identify a specific machine model and manufacturer.

However, our work has been to narrow, as much as possible, the types of machines a questioned document could have come from.

A computer searchable IR spectral database of 639 copy toners, representing 72 brands, was produced. Samples were transfered to aluminum foil by heating the back side of the paper with a soldering iron (1). The spectra were obtained by reflection-absorption (R-A) analysis on an FTIR microscope system. Toners were categorized into 94 groups based on the presence of spectral peaks. We observed some variation of peak intensity ratios within the groups. Conventional computerized spectral searching, using correlation comparisons, yielded successful results for group matching.

While 94 groups of toners were isolated, four of the groups are large with over 40 samples each. The evidential value for these groups is not great as with the small groups. Examiners would prefer a means to further discriminate these toners. An initial evaluation with multivariate analysis produced additional discrimination due to peak intensity variation within the largest group. We have plans for multivariate analysis of elemental composition by scanning electron microscopy with energy dispersive X-ray analysis (SEM/EDX) and organic composition by pyrolysis gas chromatography/mass spectrometry (Py-GC/MS).

The method of IR microscopical R-A spectroscopy provides an excellent means of discriminating copy toner types. However, the forensic examination of toners will improve with additional methods to produce further discrimination within the large groups.

10:00-10:15 **Break**

10:15-11:15 **Legal Updates--by Rick Conway, Commonwealth Attorney's Office, Prince William County, Va**

11:15-11:45 **Spontaneous Leadership or (If you can walk, does that make you a mountain climber?)--by Carrie Whitcomb, US Postal Inspection Service, Dulles, Va**

Why is it that good managers are not necessarily leaders?
Where do leaders come from?
What criteria/conditions are necessary for spontaneous leadership?
What type of metamorphosis is necessary to go from manager to leader? Is it possible? Can it be learned? Can you get better at it?
I can walk, but what do I need to climb Mt. Everest?
What are the characteristics of Leadership? Inspiring others to be the best they can be.

How do you detect leadership? You look at those around you. If you have followers, then you must be a leader!
Stay tuned for more.....

11:45-12:15 **Laboratory Waste Minimization--by James L. Mudd, REM,RHCMM,FBI**

Resource Conservation and Recovery Act (RCRA) regulations define a solid waste as any material--solid, liquid, or gas that has been discarded or abandoned, or has served its intended purpose. A solid waste is hazardous under RCRA regulations if it exhibits certain characteristics, has been listed as a hazardous waste, has been mixed with a hazardous waste, or was derived from the treatment, storage, or disposal of a listed hazardous waste. The disposal of hazardous chemicals and waste can be a difficult and expensive problem. This cost can be 10-20 times the original cost of the material. Under RCRA, certain categories of hazardous waste generators (laboratories) must certify that a waste minimization program is in place. This presentation will review program elements and options for waste minimization.

12:15-12:45 **Utilization of the Internet for Health Safety and the Environment-- by David Eherts, Director of Health and Safety, Rhone-Poulenc, Rorer**

MAAFS

AND

VIRGINIA DIVISION OF FORENSIC SCIENCE

EXTEND

OUR VERY SPECIAL THANKS

TO OUR

EXHIBITORS AND CONTRIBUTORS

WITHOUT YOU, WE COULDN'T HAVE DONE IT!!!

EXHIBITORS - 1997 MAAFS MEETING

Exhibitor:	Representative:
AG Communication Systems 2500 West Utopia Road PO Box 52179 Phoenix, Arizona 85072 602-581-4891	Philip Deschaine Simon Key
Analytical Bio-chemistries, Inc. 1680-D Loretta Avenue Feasterville, PA. 19047 212-322-9210	Dr. Ted Seik
Cellmark Diagnostics 2071 Goldenrod Lane Germantown, MD 20876 800-872-5227	Reem Samaha
Hewlett-Packard Company 201 Concourse Blvd.,Suite 100 Glen Allen, Va. 23060 800-477-6444	Henry Wilson
Hitachi Software 601 Gateway Blvd., Suite 500 S. San Francisco, CA 94080 415-619-9600	Mike Miller
JEOL USA, Inc. 11 Dearborn Rd. Peabody, MA 01960 508-535-5900	Ray Gundersdorff John Bonnici
Labconco Corporation 501 Sunfield Way Frederick, MD 21703 800-821-5525	Bill Love
Life Technologies, Inc. 9800 Medical Center Dr. PO Box 6482 Rockville, MD 20849 800-828-6686	Tom Roberts
Lynn Peavey Company 14865 West 105th St. Lenexa, KS 66215 800-255-6499	Jerry Kramper
Misonix, Inc. 1938 New Highway Farmingdale, NY 11735 516-694-9555	Ken Greco
Nicolet Instrument Corporation 9901-H Business Parkway Lanham, MD 20706 800-237-2800	Jim Fitzpatrick

Nikon, Inc.
6420 Dobbin Rd., Suite E
Columbia, MD 21045
410-740-7404

Larry Kordon

NuAire, Inc.
2100 Fernbrook Ln.
Plymouth, MN 55447
800-328-3352

Carrie Burreson

Olympus America, Inc.
2 Corporate Center Dr.
Mellville, NY 11747
800-446-5967

Juergen von der Heiden

Perkin-Elmer Corporation
Applied Biosystems Division
850 Lincoln Center Dr.
Foster City, CA 94404
415-638-5343

Kathryn Webster
Nicky Fildes

Promega Corporation
2800 Woods Hollow Rd.
Madison, WI 53711
608-274-4330

Mary Hoenecke

Rainin Instrument Corporation
Mack Rd. PO Box 4026
Woburn, MA 01888
800-472-4646

April West

Robbins Scientific Corporation
814 San Aleso Ave.
Sunnyvale, CA 94086
408-734-8500

John Clemente

Shimadzu Instruments
7102 Riverwood Dr.
Columbia, MD 21046
800-477-1227

Peter Reves
Diamond Melville

Zymark Corporation
Zymark Center
Hopkinton, MA 01748
504-435-9500

Nancy Robertson
Ed Halpin

Thanks to all the Exhibitors for making this meeting possible.

CONTRIBUTORS OF DOOR PRIZES

Company:	Door Prize:
Alltech Associates	?????
Amersham Corporation	Insulated lunch bag, 4 T-shirts
Bellco Glass	Cross Pen and Pencil set
Boehringer Mannheim Bio	Gift Basket(T-shirt,Watch,Mug)
Dionex Corporation	Book:Ion Chromatography
EM Scientific	12 T-shirts (Periodic Table)
Fisher Scientific Company	2 Framed Prints,2 T-shirts, Recorder registration freebies
FMC Bioproducts	9 T-shirts
Hamilton Company	3 Desk Clocks
Hitachi Software	??????
Labconco Corporation	Several "Labby the Labsters"
Lynn Peavey Company	Revolver Cup, 2 T-shirts
Payton Scientific	2 Lumilite Coolers
Perkin-Elmer Corporation	2 Mugs
P.J. Cobert Associates, Inc.	3 T-shirts, pens etc.
Promega Corporation	1 Sweatshirt
Restek Corporation	Land's End Attache, Land's End Rugby Shirt, Cooler
Shimadzu Instruments	Dinner at Restaurant of Choice
Sorvail	Attache Case, Button Shirt
UVP	UV Lamp
VWR Scientific Company	2 Tool Kits,LaserPointer,Stopwatch

Coffee breaks sponsored by Analtech and JEOL USA, Inc.

Special thanks to the Virginia Division of Forensic Science for sponsoring part of the registration attache cases, and to the American Academy of Forensic Sciences for their contribution toward the printing of the program.

MAAFS REGISTRATION

NAME	LABORATORY AFFILIATION
Anderson, Ted	Armed Forces DNA Identification Lab
Ballou, Susan M.	Montgomery Co. Crime Lab
Bann, Jeff	Virginia Division of Forensic Science
Baral, Sanghanietra	Prince George's Co. Police Dept Lab
Baral, Subhash	Prince George's Co. Police Dept Lab
Bartick, Edward G.	FBI Academy
Belcastro, Peter Jr.	FBI
Bickle, William L.	Montgomery Co. Crime Lab
Black, Robert	Pennsylvania State Police
Blackwell, Thomas M.	Drug Enforcement Administration
Blanchard, Amanda	Virginia Commonwealth University
Blecha, Danielle	George Washington Univ.
Bonner, David A.	FBI
Borlase, Heather	George Washington Univ.
Branson, Erik	Forensic Science Forum ,
Brown, J. Anthony	Virginia Division of Forensic Science
Bryant, Chris H	Virginia Division of Forensic Science
Bunch, Jeannette	FBI
Bush, R. Elizabeth	Virginia Division of Forensic Science
Byers, Melanie	Virginia Division of Forensic Science
Callaghan, Thomas F.	FBI DNA Unit
Campbell, Debra	District of Columbia Metro Police
Campbell, Robert J.	Virginia Division of Forensic Science
Carey, Kim	George Washington Univ.
Carter, Tanarra L.	NCIS Forensic Lab, Norfolk, VA
Catley, Diane W.	Virginia Division of Forensic Science
Chesnavage, Clare	George Washington University
Christian, Myrtle C.	Virginia Division of Forensic Science
Clayton, S. Rene'	Virginia Division of Forensic Science
Cohen, Susan E.	Montgomery Co. Crime Lab
Cole, Jerry	Secret Service
Collins, Berkley III	Virginia Division of Forensic Science
Concannon, Gail	AFDIL
Cooke, Jane C.	Anne Arundel Co. PD Crime Lab
Cover, Jeffrey G.	Maryland
Cox, Pam	Virginia Division of Forensic Science
Creasy, Michael	North Carolina State Bureau of Invest.
Dabbs, Deanne F.	Virginia Division of Forensic Science
Dasgupta, A.	For. Science Lab, Wilmington, DE
Davia, Kim	Virginia Commonwealth University
Davis, Eileen A.	Virginia Division of Forensic Science
Dawson, Mary	Maryland State Police Crime Lab
Deadman, Harold	George Washington University
Dean, Cindy B.	Maryland State Police Crime Lab
DeGaetano, Douglas H.	Virginia Division of Forensic Science
Desai, Rita	Virginia Division of Forensic Science
Dewan, Thomas	FBI
Dodson, Annette C.	IIT Research Institute
Donahue, Kathy	Virginia Division of Forensic Science
Duetsch, Karen	Virginia Division of Forensic Science

MAAFS REGISTRATION

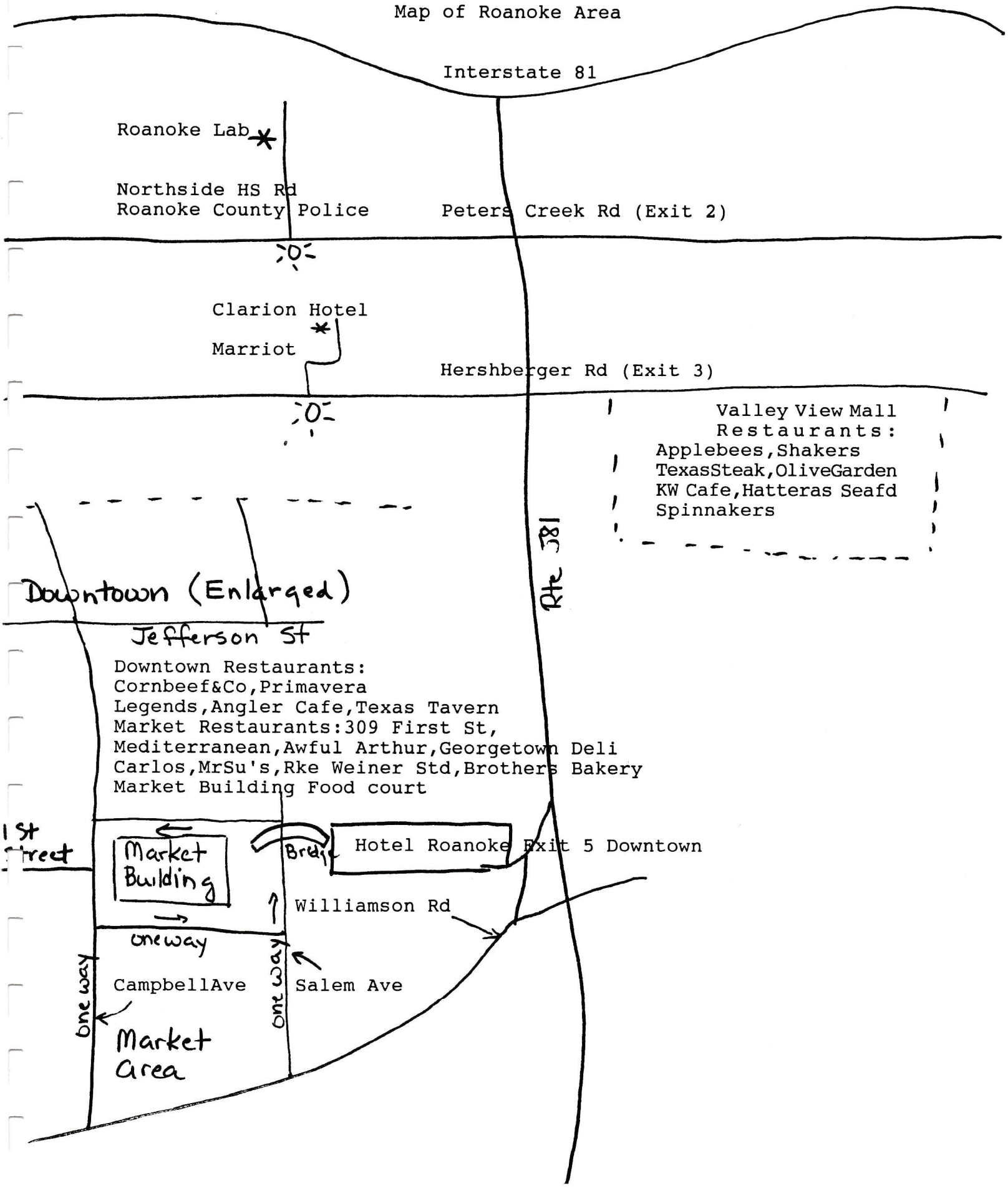
NAME	LABORATORY AFFILIATION
Dwyer, Kara T.	George Washington Univ.
Ermlick, Scott	Pennsylvania State Police
Exline, David L.	Anne Arundel Co PD
Faber, Lisa	George Washington Univ.
Faber, Lisa	George Washington University
Fasano, Michael A.	Armed Forces DNA Identificatio n Lab
Ferrara, Paul B.	Virginia Division of Forensic Science
Finley, Harry M.	Naval Criminal Investigative Service
Fishel, Charles E. Jr.	Virginia Division of Forensic Science
Fisher, Constance L.	FBI
Flanagan, Lori L.	FBI
Ford, Vanessa L.	IIT Research Institute
Fox, Harry A. III	Pennsylvania State Police
Fox, Lloyd A.	Virginia Division of Forensic Science
Freed, Harold	Pennsylvania State Police
Frensley, Grant	FBI Special Photographic Unit
Fumeg, Jeff	Pennsylvania State Police
Galyen, Kelley	Maryland State Police Crime Lab
Gentile, Sheila M.	Maryland State Police Crime Lab
Gervasoni, Richard P.	Montgomery Co. Crime Lab
Gist, Elmer, Jr.	Virginia Division of Forensic Science
Given, Jo Ann	NCIS Forensic Lab, Norfolk VA
Gomez, Manuel	George Washington University
Gotwald, Sarah L.	Pennsylvania State Police
Gray, Wendy	Virginia Commonwealth University
Gregory, Teresa L.	Maryland State Police Crime Lab
Grieshaber, Alison	George Washington University
Grow, Gordon	Polaroid Corp
Hamel, Thomas J.	Marriott, Chantilly VA
Harrison, Eugene R.	Virginia Division of Forensic Science
Hartsock, Sandra J.	Maryland State Police Crime Lab
Hazelrigg, Eric	Virginia Division of Forensic Science
Hazen, Renee	FBI
Heurich, Charles M.	Montgomery Co. Crime Lab
Higgins, Kathleen M.	National Institute of Stds and Tech.
Hoffman, Melinda	Allegheny Co Crime Lab
Hoffman, Melinda	Allegheny County Crime Lab
Holleran, Joseph M.	Pennsylvania State Police
Honse, Caroline E.	For Science Lab, Wilmington, DE
Hughes, Kelly L.	George Washington University
Hunt, Rebecca S.	Virginia Commonwealth University
Isanogle, Amy	Virginia Division of Forensic Science
Jackson, Kirsten	IRS Forensic Lab
Jackson, Linda	Virginia Division of Forensic Science
James, Elizabeth	FBI
Juanakais, Maris	Naval Criminal Investigative Service
Kalager, Kathleen	George Washington Univ.
Kay, Christopher J.	FBI
Kelly, Ronald L.	FBI
King, Barry R.	FBI Special Photographic Unit
Kiser, Wilmer O.	Virginia Division of Forensic Science

MAAFS REGISTRATION

NAME	LABORATORY AFFILIATION
Kittel, Hartford R.	Alexandria, Va
Kletzli, Nancy	Virginia Division of Forensic Science
Koppenhaver, Katherine	Joppe, Md
Koppenhaver, William	Joppa, Md.
Koszelak, Nancy A.	AFDIL
Krzeminski, Suzanne L.	Forensic Toxicology Drug Testing Lab
Lappas, Nick	George Washington University
Lawrence, Amy	Virginia Division of Forensic Science
Lee, Terry W.	Virginia Division of Forensic Science
Leibowitz, Jeffrey N.	FBI
Lester, Richard E.	FBI Academy
Li, George	Virginia Division of Forensic Science
Llewellyn, Barbara	Virginia Division of Forensic Science
Lorenz, Walter R.	Allegheny Co. Crime Lab
Losquadro, Kristina M.	FBI
Love, Eric	Maryland
Lundy, Kathleen	FBI Lab
Madhavan, Kochu K.	For Science Lab, Wilmington, DE
Mafori, Michele	George Washington Univ.
Marks, Kathryn J.	Virginia Division of Forensic Science
Martin, C. David	Virginia Division of Forensic Science
Mason, Brenda P.	Virginia Division of Forensic Science
Matechak, Errin	George Washington University
Mauroff, Janice S. A.	Burlington Co. Forensic Science Lab
Mausolf, Norman	Drug Enforcement Administration
Mayberry, Kenneth M.	Pennsylvania State Police
Mayo, Michael B.	Virginia Division of Forensic Science
Mayo, Milagros Nellie	PGPD Laboratory
McCauley, Leslie M.	FBI Academy
Menzies, Gordon	Virginia Division of Forensic Science
Midkiff, Charlie R.	American University
Miller, Vickie A.	Virginia Division of Forensic Science
Monroe, Meredith	Maryland State Police Crime Lab
Moul, Susan	ATF
Mudd, Jim	FBI
Murphy, Sarah	George Washington University
O'Neil, D.J.	Virginia Division of Forensic Science
O'Rear, Charles E.	George Washington University
Oberdorf, Corrie	Virginia Division of Forensic Science
Padula, Cassandra Marie	Washington, DC
Paxton, Emily	Juniata College, Huntington, PA
Perfetti, Christina A.	George Washington Univ.
Petty, Alan E.	Montgomery Co. Crime Lab
Pezzullo, Jennifer	Roanoke College
Pinkston, Wendy A.	Virginia Division of Forensic Science
Polk, Clarence	Ocean City , MD, Police Dept
Pomposini, David	Virginia Division of Forensic Science
Porter, Robin D.	Virginia Division of Forensic Science
Profili, Mark	Baltimore City PD
Quenzer, Charles F.	FBI Chemistry Unit
Quinn, A. Robin	For Science Lab, Wilmington, DE

MAAFS REGISTRATION

NAME	LABORATORY AFFILIATION
Rauscher-Finn, Stephanie	Virginia Division of Forensic Science
Richardson, Clyde E.	Drug Enforcement Administration
Robison, Jennifer	Virginia Commonwealth University
Rodgers, Stephen	Virginia Division of Forensic Science
Rowe, Walter F.	George Washington University
Ryan, John H.	Armed Forces DNA Identification Lab
Rzyewski, Casimir N.	Pennsylvania State Police
Sansone, T. Paul	Virginia Division of Forensic Science
Santos, Jocelyn S.	Maryland State Police Crime Lab
Schmidt, Howard	Computer Forensics
Shaffer, Douglas K.	Maryland State Police Crime Lab
Shea, Brendan F.	FBI
Shearer, Barry	Maryland State Police Hagerstown Lab
Sigel, Steven	Virginia Division of Forensic Science
Simpson, Thomas P.	Virginia Division of Forensic Science
Smith, Carol L.	IIT Research Institute
Smithson, Melissa L.	Maryland State Police Crime Lab
Starr, Andrew C.	Takoma Park, Md
Stickline, Susan E.	Hagerstown Police Dept
Stief, Lorraine	Cabin John, MD
Stouder, Stacy	FBI
Tarver, Margaret L.	New Jersey State Police South Lab
Taub, J. S.	North Carolina State Bureau of Invest.
Taylor, Pat	Virginia Division of Forensic Science
Tengonciang, Josefina T.	For Science Lab, Wilmington, DE
Thomas, Pat	George Washington Univ.
Tomsey, Christine S.	Pennsylvania State Police
Tontarski, Karolyn Leclaire	Virginia Division of Forensic Science
Tontarski, Rick	ATF
Townley, Amy Jo	Virginia Commonwealth University
Upshaw, Michelle	Virginia Commonwealth University
VanGelder, Daniel	Baltimore Police Dept, Lab Division
VanPatten, Isaac	Roanoke
Vanty, Mitzi	Virginia Division of Forensic Science
Vorder Bruegge, Richard W.	FBI Laboratory
Vosburgh, William T.	Anne Arundel Co. PD Crime Lab
Wagner, Nancy	Virginia Division of Forensic Science
Waldrop, Marlene E.	FBI Academy
Walker, Jerry	Drug Enforcement Administration
Waller, James	Virginia Division of Forensic Science
Waninger, Eileen	FBI
Watson, Lynda T.	Baltimore Co. PD
Wendt, Gerhard	Pennsylvania State Police
Whitcomb, Carrie M.	US Postal Service Inspection Service
Wong, Amy	Virginia Division of Forensic Science
Wong, Cina	Norfolk, Va
Wulderk, Michele L.	For Science Lab, Wilmington, DE
Yoo, Wesley J.	FBI Academy
Young, Farolyn	Virginia Division of Forensic Science


Map of Roanoke Area
Interstate 81
Roanoke Lab
Northside HS Rd
Roanoke County Police
Peters Creek Rd (Exit 2)
Clarion Hotel
Marriot
Hershberger Rd (Exit 3)
Valley View Mall
Restaurants:
Applebees,Shakers
TexasSteak,OliveGarden
KW Cafe,Hatteras Seafd
Spinnakers
Rte 581
Downtown (Enlarged)
Jefferson St
Downtown Restaurants:
Cornbeef&Co,Primavera
Legends,Angler Cafe,Texas Tavern
Market Restaurants:309 First St,
Mediterranean,Awful Arthur,Georgetown Deli
Carlos,MrSu's,Rke Weiner Std,Brothers Bakery
Market Building Food court
1 St
Street
Market Building
Bridge
Hotel Roanoke Exit 5 Downtown
Williamson Rd
oneway
one way
one way
CampbellAve
Salem Ave
Market Area