

The Criminalist

The Official Publication of the New Jersey Division, I.A.I.



Autumn 2008

New Jersey State Division

International Association for Identification

PO Box 423, New Milford, NJ 07646

PRESIDENT

David Kappler
Cherry Hill Police Dept.

1ST VICE PRESIDENT

Howard Ryan
New Jersey State Police

2ND VICE PRESIDENT

James Molinaro
New Jersey State Police

3RD VICE PRESIDENT

Michael Stallone
Bergen County Sheriff's Office

4TH VICE PRESIDENT

Colin Maher
Bergen County Sheriff's Dept.

SECRETARY/TREASURER

Ryan Magnotta
Bergen County Sheriff's Dept.

SERGEANT AT ARMS

Gerald Reap
Bergen County Sheriff's Dept.

HISTORIAN

Albert Riccio

New Jersey Division Board of Directors

CHAIRMAN

Tony Borgognoni
Bergen Co. Sheriff's Office

MEMBERS

Michael O'Brien Joseph F. Racite John Kennedy Joseph Taussi
William Kirkbride, Jr. Gary Jones James O'Brien
Robert Johnson Timothy F. Sullivan III George Shigo

THE CRIMINALIST, P.O. BOX 2413, EDISON, N.J. 08818

ISSN: 1549-5213

EDITOR: Robert J. Garrett, IDMAN Forensics

PUBLISHER: NJ State Div., IAI, P.O. Box 2413, Edison, NJ 08818

The Criminalist is published quarterly. Advertising is accepted and rates are posted in each issue. Articles or editorial contributions should be made on computer disk, CD or via email in a popular word processing format. Illustrations should be made in either black and white photography or black and white line art. Color photos are admissible but will be published in gray scale. Illustrations and photographs submitted for publication in digital format should have a minimum resolution of 300 ppi. Editorial assistance is available to those wishing to contribute articles.

E-mail: editor@njiai.org Phone: 732-548-8431

On the Internet: www.njaii.org



President's Message

After working my way “through the ranks” of the executive board I am now President of this Association. As a matter of introduction, I am Detective David Kappler, a 30 year veteran of the Cherry Hill Police Dept. I have been doing varying types of Crime Scene Investigation work of for more that 25 of those years. I have been involved with the operation of the NJ IAI for four years and have attended and organized many of their events.

This year we have a few goals to achieve. The first goal is to increase membership by increasing awareness of our association and the benefits of membership. I intend to meet with the NJ State Police Chiefs Association, County Detective Associations and other groups and to encourage them to endorse or association to their members.

It is also incumbent upon all of our members to be recruiters for our association. Tell your supervisors and colleagues about the benefits of being a member of the IAI and encourage them to join. Any sworn officer whose duties involve forensic investigations may join as an active member. Active members are eligible to test for certification in their fields of expertise such as Crime Scene Investigation, Fingerprints, and many others. Students pursuing forensics in college are also eligible for a restricted membership.

The second goal is to provide free training sessions for our members and also non-member colleagues. The first of these was recently hosted by the Bergen County Sheriff Office's Crime Scene Unit. A group of crime scene investigators from around the state spent the day learning about how IAI certifications in their

field can improve their CV, credibility in court, and job knowledge.

Two more sessions are planned, one central and the other south to accommodate all of our members. The agendas are still being developed and notices will be sent out when plans are finalized. To be placed on the e-mail notification list for these sessions please contact Secretary Ryan Magnotta at rmagnotta@bcsd.us.

Our third goal is to increase involvement in operation this association. Each year a 4th Vice President is elected and committee member are always needed to perform valuable functions. I encourage each member to offer their talents in needed areas and help make our association better and better each year.

This year's annual training conference promises to be even better than past years. We have found a comfortable home at the NJSP Technology Complex located in Hamilton Township, Mercer County. We hope that using this central location will make attendance convenient for anyone to attend. This is the one IAI event for which there is a registration fee. Prominent speakers in our field and networking opportunities make this even valuable to attend. We can always use help in organizing and conducting the conference. Give us a call if you are interested in volunteering to be a part of it.

Be safe, be healthy and we hope to see you at the next training session.

David Kappler

EVIDENCE COLLECTION MODULE

Compatible with:
Ford Explorer • Ford Expedition
Chevrolet Tahoe • Dodge Durango

Finally a Cabinet Module designed specifically for Crime Scene Processing and incorporating construction materials that do not compromise stored evidence like wood and fabric finished units can.

The ECM-100, Evidence Collection Module was developed for use in the most popular Sport Utility Vehicles including the Special Service Packages offered from Ford, Chevrolet, and Dodge.

*Module Shown in Ford Explorer



*Accessible from Rear Hatch

Other Leading Particulars are:

Weatherproof: The Aluminum Cabinets with Industrial, baked on paint finish do not absorb moisture or rot due to exposure to rain or the elements.

Interchangeability: Evidence Collection Modules are easily changed from one vehicle to another when a vehicle is retired from service.

Organization: Forensic Kits and shelves labeled to ensure organized storage of equipment.

Convenience: Used as a take home vehicle, the Crime Scene Technician can respond directly to Crime Scenes, without reporting to the Police Station to pick-up equipment.

Maximum Evidence Security: Modules are provided with three (3) Evidence Compartments equipped with Medico high security, virtually pick proof locks with patented key control to prevent unauthorized duplication of keys. Each door is provided with a different key. Collected evidence can be locked in the compartment and the key dropped through the slot. The evidence is preserved until the property custodian opens using the master key. This method insures critical chain-of-custody is maintained.

Sirchie's Standard ECM-100 Comes Equipped with the Following Kits:

Professional Sketch Kit - Anti-Putrefaction Mask Kits - Apprehender Special Kit - Latent Print Kit
Evidence Packing Kit - Primer Residue Collection Kit - Master Shake-N-Cast Kit - TexturLift Silicone Casting Kit
DNA Evidence Collection Kit - Master Narcotics Analysis Kit - Standard Photo Documentation Kit - Search Alert Metal Detector
Nylon Rope 100 ft. - Permanent Recovery Magnet - Barrier Tape Dispenser - Barrier Tape 1,00 ft.

Call Toll Free

1-800-545-7375

sirchienj.com

sirchievehicles@comcast.net



P.O. Box 789, Medford, NJ 08055

Understanding the ACE-V Methodology as Applied to Fingerprint Comparisons

Lt. Robert J. Garrett, ret.
CLPE, CSCSA
IDMAN Forensics, LLC

The scientific methodology which is used to guide and define the comparison of fingerprints is known as ACE-V, an acronym for Analysis, Comparison, Evaluation and Verification. This description of the comparison methodology has been credited to Roy Huber, formerly of the Royal Canadian Mounted Police (RCMP). It was popularized as the methodology for fingerprint comparisons by another RCMP officer, David Ashbaugh, who has written and taught extensively on the subject.

All competent fingerprint examiners use this methodology with every comparison, but often subconsciously. They may find it difficult to put their intellectual processes into descriptive words beyond the recitation of the acronym. Here is offered an explanation of the steps involved in the ACE-V methodology organized to assist with recording the process.

Analysis

1. The unknown impression is viewed under optical or electronic magnification.
2. The unknown impression is examined for discernible ridge detail.
 - a. An assessment is made regarding the quality and quantity of ridge detail in the impression.
 - b. If there is no discernible ridge detail, the examination is over and the latent is considered of no value for comparison purposes.
3. An assessment is made regarding the physical make up of the impression.
 - a. Substrate (surface) on which the impression was deposited and the effect it may have had on the appearance of the impression
 - b. Matrix: the substance of which the impression is made e.g. sweat, oil, blood, ink, etc.
 - c. Development media: what was applied to the latent impression to make it visible
 - d. Pressure: did the pressure exerted during contact between friction ridge skin and the receiving surface affect the appearance of the impression or the development process
4. Ridge detail is examined for specific properties.
 - a. Pattern type is determined if sufficient detail is present (Level 1 detail).
 - i. The flow of the ridges through the impression is observed and noted.
 - ii. Core characteristics are noted, if present.
 - iii. Delta characteristics are noted, if present.
 - b. The path of the ridges through the impression is observed and noted (Level II detail).
 - i. Interruptions in ridge path are noted (ridge events).
 - (1) Ending ridges
 - (2) Bifurcations

- (3) Dots or islands
- ii. Uninterrupted ridges are noted.
- iii. The linear relationship between ridge events is noted.
 - (1) This is accomplished by noting the number of intervening uninterrupted ridges between events as opposed to direct dimensional measurement.
- c. Discernable ridge structure is noted (Level III detail).
 - i. The shape of ridge edges
 - ii. The position and shape of pores
 - iii. The presence and position of incipient ridges
- d. Sufficiency of detail is determined
 - i. Dependent on the quality/clarity of detail
 - (1) Quality/clarity will determine what ridge detail may be observed and used for comparison.
 - ii. Dependent on quantity of detail
 - (1) There must be sufficient detail to create a correspondence map of discriminating features.
 - (2) Discriminating value, of features or groups of features, is determined by frequency of occurrence in the general population.
 - iii. In the analysis phase, sufficiency refers to the suitability of the impression for comparison to a known print.
 - (1) An impression may be found to be of value to exclude a source when it exhibits discernible ridge flow but lacks ridge path or ridge structure data.
 - (2) Ridge flow may be influenced by external factors and lose its discriminating value.
- 5. The analysis is performed on both the unknown and known impressions.

Comparison and Evaluation

Comparison and Evaluation is a toggling process which continues until the examiner has determined that:

- The unknown and known impressions share a common source (identification).
- The unknown and known impressions do not share a common source (exclusion).
- The unknown and/or known impressions do not contain enough correlating data to permit a conclusion of identification or exclusion (inconclusive).

- 1. The known and unknown are compared for common features.
 - a. Agreement of pattern
 - i. Disagreement of pattern (ridge flow) is not an automatic disqualifier.
 - ii. Pattern appearance can vary due to distortion, injury, illness or mutilation.

- iii. If an abundance of feature correlation exists but the pattern is not in agreement the examiner may wish to search an earlier fingerprint record which may reveal changes due to injury, illness or mutilation.
- b. A discriminating feature in the unknown print is chosen as a starting point for the comparison process.¹
 - i. A similar looking feature appearing in the same relative position of the known print is sought.
 - (1) If the feature is not found, another feature is chosen and searched.
 - (2) If no common features are found the comparison is over and no match declared.
 - (a) If no common features can be found, the examiner may reach a determination of inconclusive allowing that not all friction ridge detail from the known source was presented for comparison.
 - (b) If the examiner had available a complete friction ridge record of the known source and used the entire record in the comparison process, the examiner may reach a conclusion that the two prints do not share a common source.
 - (c) If the unknown impression was of sufficient size and detail to allow a determination of origin from a specific portion of friction ridge skin and the known record contained the same anatomically referenced area, the examiner may exclude the known impression as having a common source with the unknown impression.
 - ii. Once a common starting point is found, a second feature is chosen.
 - (1) The position of the second feature in relation to the starting point is determined in the unknown print.
 - (2) The second feature is searched in the known print.
 - (a). If the second feature is found in the same relative position to the starting point as in the unknown, a third feature in the unknown is chosen and similarly searched.
 - (b) If the second feature is not found and its absence can not be accounted for due to some physical displacement, the known print is excluded as having a common source with the unknown print.
 - (3) The search for correlating features continues until the examiner is satisfied that a sufficient amount of common data is found.
 - (a) The exclusion of a common source may occur at anytime during the comparison/evaluation process due to a feature in the unknown being absent and unaccounted for in the known print.
 - (b) Once the threshold of commonality is crossed, the examiner may conclude that

both impressions share a common source.

(c) Sufficiency is determined by an evaluation of the features used based on the rarity of their occurrence in the general population and the volume of appearance in the studied impressions.²

Verification

The verification process is controversial and misunderstood. Some agencies require blind verification, where the verifier treats the examination like a new case, believing that this would eliminate any bias in the process of confirming results. However, this merely creates a second identification (or exclusion or inconclusive). Blind verification does not validate the process followed by the original examiner since the verifier may use a completely different set of data to reach the same conclusion. Undertaking a verification knowing that a conclusion has been reached with regard to the source of an impression, or knowing what the original examiner's conclusion was, also does not allow for the checking of the process or data used.

To have a proper (scientific) verification or peer review of the process, the verifying examiner needs to see all the data used by the original examiner and a sufficient recording of the ACE process in order to validate the process, data and ultimately the conclusion. The record may be graphic, as in an annotated chart, or textual, which may also include abbreviated references and predefined forms. This maximizes the accountability of the examiner of record and makes it possible for his/her conclusion(s) to be falsified.³

A good methodology is no substitute for proper training and skill development. However, following the ACE-V methodology is a step toward assuring that the comparative examination was transparent and logically executed. Anyone wishing to test the conclusions reached (attempt to falsify) or the process of comparison will have all they need to conduct a review.

References

1. David R. Ashbaugh, Quantitative-Qualitative Friction Ridge Analysis, (New York: CRC Press 1999) p. 142
2. Robert D. Olsen, Sr., Scott's Fingerprint Mechanics, (Springfield, IL: Charles C. Thomas 1978) p.9-11
3. For a proposition to be falsifiable, it must be possible for some observation to be made that contradicts the original premise.

IT'S ABOUT OUR PEOPLE...



*...who bring their time and talent to bear on our clients' most important needs
...who believe it is their mission to support those who serve and protect
...who get the job done because it is the right thing to do.*

At Ideal Innovations, Inc., we know our success is the result of our people.

That's why we give them opportunities to expand and cultivate their talents, to take charge of their goals, to be integral to the success of our mission. Our people have made us the most responsive, forward-thinking company in the industry.

Be part of the company that moves as only an elite, agile team can.

Be one of our people.

IDEAL INNOVATIONS, INC.

Consulting - Project Management - Inventions - R&D

<http://idealinnovations.com> - careers@idealinnovations.com

NOW HIRING: Scientists - IT Professionals - Biometric and Forensic Specialists



IAI Monthly Update

Joseph Polski, Chief Operations Officer

February 2009

Hello again from the IAI office.

2009 Tampa Conference – Special Notice

The registration booklet for the upcoming Tampa Conference will not be printed and mailed to IAI members it has been in the past. This year the booklet will be posted in a “digital magazine” format on the IAI’s website. The technology used to display the booklet is remarkable and should be very easy for any computer user to navigate. In the next month or so, a postcard will be sent notifying members of this change. Notices to this effect will also be placed in Identification News and the Journal of Forensic Identification.

This change will save a considerable amount in printing and postage costs, both of which have risen a good deal in the past several years. The conference program distributed to attendees at the Tampa Conference **will** continue to be available as a printed document. We welcome your feedback on this process as we strive to provide services to our members, take advantage of new technology and be good stewards of the association’s funds.

As soon as the program is available on the website, I will send notices to all recipients of the *Monthly Update* so that information can be disseminated to all members and divisions.

Conference Registration Rates

During the recent mid-year meeting, the Board of Directors authorized an increase in conference registration rates. Complete information will be listed in the registration booklet but below are some of the rate changes:

- IAI & AAFS Members Pre-registration: From \$275 to \$295
- IAI & AAFS Members On-Site Registration: From \$325 to \$345
- Spouse/Guest of Member Pre-registration From \$150 to \$170
- Spouse/Guest of Member On-Site Registration From \$175 to \$195

AFIS Interoperability Working Group

The third meeting of this Technical Working Group was held on January 27-28, 2009 in San Diego, CA. As I have previously reported, this is sponsored through a joint effort between the National Institute of Justice (NIJ) and the National Institute of Standards and Technology (NIST) Office of Law Enforcement Standards (OLEs).

The meeting was extraordinary in that representatives from five major AFIS vendors attended the two-day event. Those attending represented Printrak/Motorola, Cogent, NEC, Sagem-Morpho and L-1. On the first day each vendor was given the opportunity to make a presentation outlining their efforts regarding interoperability and their views on the subject. That resulted in an extended question and answer session with the vendors. It became very clear that interoperability between AFIS systems is badly needed by the latent fingerprint community and that technology is available to

make that happen. Because this is one of the bullet points mandated for study by the National Academy of Sciences Forensic Committee, this TWG takes on even greater importance in light of the upcoming recommendations from that committee.

I will have more information about this in my next *Identification News* column.

Mid-Year Board of Directors Meeting

On January 12 and 13th, 2009, the IAI's Board of Directors met in Orlando, Florida. A few highlights of that meeting include:

- Awarded Distinguished Membership to Michael Perkins, Debbie Leben and Dr. Tony Cantu
- Decided not to change the requirements for Student Membership in the IAI
- Received information that the Crime Scene Reconstruction Certification Program is on track and a sample test is being created by the Crime Scene Certification Board; that program should be at or near completion by the Tampa Conference.
- Discussed the accreditation of IAI certification programs by the Forensic Specialties Accreditation Board (FSAB) and the changes required in the IAI's Certification Policy Manual as a result of that accreditation application
- Heard a presentation by Marla Carroll respecting the Forensic Video Analyst Certification Program. The board endorsed Marla's efforts as chair of the study committee dealing with this matter and asked her to continue development of an examination. The Board will consider in Tampa officially creating that new program.
- Candy Murray discussed future conference sites. The board endorsed Providence, Rhode Island as the site for the 2013 conference and Minneapolis, Minnesota as the site for the 2014 conference. Both decisions are contingent on negotiating appropriate agreements for hotels, convention center use etc.
- Approved an increase in conference fees. See separate item above for more information.

NIST/NIJ Human Factors Technical Working Group

The next meeting of the NIST/NIJ Technical Working Group regarding Human Factors in Latent Fingerprint Identification will be in Las Vegas on February 26-27, 2009. More information on this important meeting will be provided in *Identification News*.

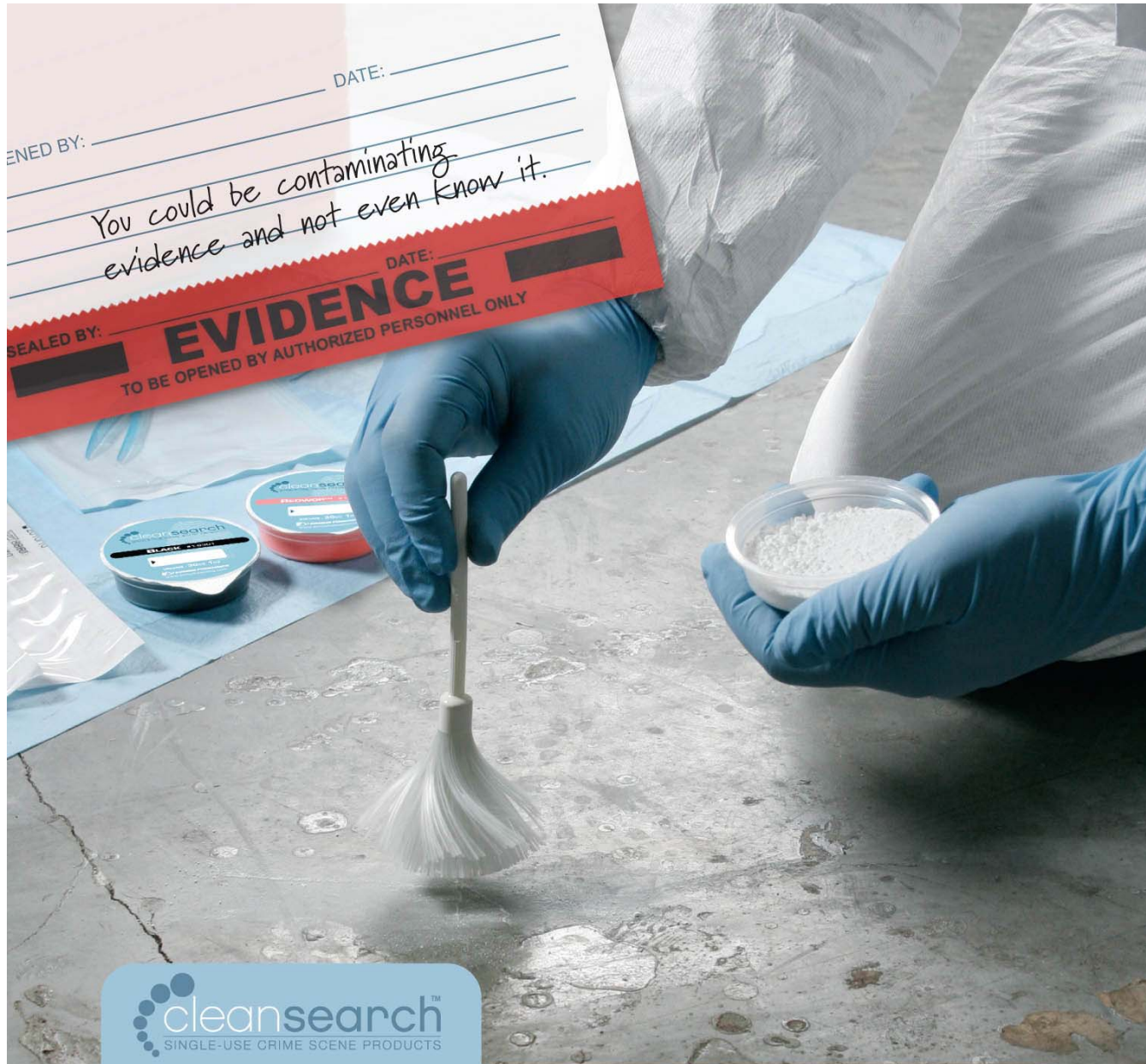
American Academy of Forensic Sciences (AAFS) Meeting

Later this month President Bob Garrett and myself will attend the annual meeting of the American Academy of Forensic Sciences in Denver, Colorado. As has been our custom, we will set up the IAI's display and distribute information about the association, certification programs etc. In addition, Board Chair and CFSO Liaison Ken Martin will attend the CFSO Meeting to be held in Denver during the AAFS Meeting.

Many other groups also meeting during the AAFS Meeting. Those include the Annual Business Meeting of the Consortium of Forensic Science Organizations (CFSO), the Forensic Specialties Accreditation Board (FSAB) and others. The FSAB will consider the IAI's application for accreditation of our certification programs during their meeting in Denver. Having served on the FSAB in its early years when the accreditation standards were developed, I was asked to represent the IAI at the FSAB meeting where the application for accreditation of our certification programs is reviewed. Lets hope that process goes well.

As always, don't hesitate to contact the IAI office if there is anything we can do to assist you.

Joe Polski



INTRODUCING ALL-NEW DISPOSABLE FORENSIC TOOLS.

The integrity of your evidence is the most important aspect of any investigation. CleanSearch™ products eliminate the risk of your tools cross-contaminating your crime scene by giving you a clean set of tools for every investigation. All CleanSearch™ products are single-use and disposable, so you don't have to worry about what your tools may be depositing at the scene. Visit www.armorforensics.com or contact our customer service department for more information on CleanSearch™ tools.

Customer Service: US: (800) 852-0300 International: +1 (904) 485-1836



 **ARMOR FORENSICS**
www.armorforensics.com

©2006 Armor Holdings, Inc.

Membership No. _____ Date Rec'd & Membership date _____ Amount Rec'd. _____



INTERNATIONAL ASSOCIATION FOR IDENTIFICATION
NEW JERSEY STATE DIVISION
APPLICATION FOR MEMBERSHIP

Please return to: PO Box 423, New Milford, NJ 07646
Annual dues: \$20.00 Active/Associate
\$10.00 Student

I hereby make application for membership in the International Association for Identification, NJ State Division, in accordance with its Bylaws and Constitution and agree to be bound by them.

I am applying for: ACTIVE ASSOCIATE STUDENT SUSTAINING MEMBERSHIP (see other side)

Name in full: _____

Business Address: _____

Home Address: _____

Bus. Phone: (_____) _____ ext _____ Home Phone (_____) _____
(will remain confidential)

Email Address: _____ FAX Number: _____

- 1. Have you ever been convicted of a crime? Yes No
(If yes, give details on other side)
- 2. I understand that application fees paid to the Association by any new applicant between Jan. 1 and Sept. 30 shall be applied to membership dues for that year only. Fees paid by an applicant between Oct. 1 and Dec. 31, shall be applied to the following calendar year.
- 3. I also understand that if I apply for sustaining membership (10X annual dues) I am relieved from the requirement of annual dues and assessments.
- 4. All applications **MUST** be accompanied by payment of fees, which will be refunded if application is rejected.
INCOMPLETE APPLICATIONS WILL BE RETURNED.
- 5. Also, I understand that my membership certificate is the property of the association and must be returned to the secretary upon my resignation or suspension.

Because this information will be used for compiling our Membership Directory, PLEASE be precise and complete **ALL** items

6. PLEASE NUMBER UP TO THREE AREAS OF YOUR EXPERTISE

Indicate your primary discipline as number 1, then other areas as 2 and 3.

- | | | | |
|--|--|--|---|
| <input type="checkbox"/> Fingerprint Identification | <input type="checkbox"/> Questioned Documents | <input type="checkbox"/> Polygraph | <input type="checkbox"/> Criminal Justice |
| <input type="checkbox"/> Forensic Photography/
Electronic Imaging | <input type="checkbox"/> Firearms & Toolmarks | <input type="checkbox"/> Laboratory Analysis | <input type="checkbox"/> Forensic Science |
| <input type="checkbox"/> Voice Print & Acoustics | <input type="checkbox"/> Forensic Art | <input type="checkbox"/> Crime Scene Invest. | |
| <input type="checkbox"/> Innovative/Gen. Techniques | <input type="checkbox"/> Footwear/ Tire Tracks | <input type="checkbox"/> Bloodstain Pattern Analysis | |

7. Employed by/enrolled at? _____ How long? _____

8. In what capacity? _____ How long? _____

9. Name of Recommender: _____ / _____
Print or type signature required

10. Address of Recommender: _____ Member # _____ Date _____

STATE DETAILS OF "YES" ANSWER TO QUESTION #1 ON OTHER SIDE:

PERSONAL HISTORY

Spouse's name: _____

Degrees and/or Honors and other qualifications for membership:

Do you wish to receive *The Criminalist* via USPS or Internet download

The Criminalist is the quarterly journal of the NJ-IAI and contains official announcements and the division training schedule as well as articles dealing with various crime scene related issues.

MEMBERSHIP QUALIFICATIONS

Active Membership The Active Membership of the Association shall consist of heads of Bureaus of Identification or Investigation (including persons under their supervision, who are engaged in the science of identification), heads of Police Departments, Chiefs of Detectives and Sheriffs PROVIDED however, that the foregoing persons are bona fide employees of and who receive salaries from National, State, County or Municipal Governments, or some subdivision thereof.

Associate Membership All reputable persons wholly or partially engaged in any of the various phases of the science of identification and who are not qualified for active membership, are hereby eligible to become associate members. They shall, in all respects, be subject to the same rights and privileges as active members, except that they shall not be entitled to election to the office of President or Vice President.

Student Membership Persons enrolled in an accredited educational institution, who are studying a curriculum with an academic focus on the forensic sciences or criminal justice, shall be eligible for student membership and shall enjoy all the rights and privileges of an Associate Member.

11. I certify that the information contained herein is true and correct to the best of my knowledge. Any omission or falsification of information will be a basis for rejection or denial of continued membership.

Applicant's Signature and Date _____

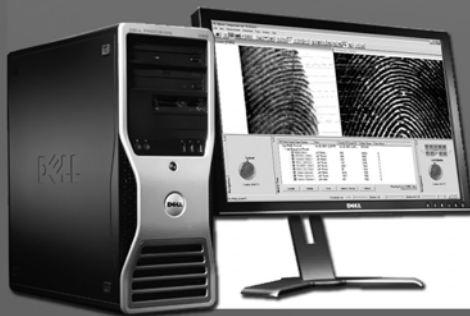
The world
isn't getting
smaller;
your
searches are
just getting
bigger.

AFIXTracker

AFIX Tracker is the automated fingerprint identification system of choice for hundreds of law enforcement agencies around the world.

Its **Remote Search** feature gives these agencies the capacity to search each other's databases as easily as they can search their own, leaving criminals with no place to hide.

To learn more about AFIX Tracker or to schedule an onsite demonstration, call:
877-438-2349



AFIXTechnologies, Inc.

info@afix.net | www.afix.net

Robert J. Garrett
Editor/NJIAI
PO Box 2413
Edison, NJ 08818

FORWARD AND ADDRESS CORRECTION REQUESTED
