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— SEE PAGE 45

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# Alive!

CSI:LA

## Fakes and Forgeries

LAPD Scientific Investigation Division's **Questioned Documents Unit** investigates crimes by examining signatures, printing, handwriting, pens and paper... or can match a real document to a crime.

— PAGE 8

Karen "KC" Chiarodit, Sr. Examiner of Questioned Documents, uses a light table and lens to examine a signature.

Alive! photo by Sammy Lam



City Employees Club of Los Angeles  
120 West 2nd Street  
Los Angeles, CA 90012

## CLUB SCHOLARSHIP AWARDEES



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# LAPD Fakes and Forgeries

■ **The LAPD Scientific Investigation Division's Questioned Documents Unit analyzes evidence by examining signatures, printing, handwriting, pens and paper.**

*Photos by Sammy Lam, Club Director of Marketing*

While it frequently uses technology, the LAPD's Questioned Documents Unit still toils away at some pretty manual tasks – shining lights sideways on paper. Cascading toner onto a notepad to see if any writing impressions from now-missing top sheets can be visualized. Peering through a microscope to determine whether a signature has been hand-written, or machine printed. Or trying to reassemble, by hand, hundreds of thin strips of paper from a shredder. But technology new and old work together to investigate crimes.

The Questioned Documents Unit examines documents to determine the facts surrounding them, their preparation, and their subsequent treatment.

The examination can include: comparison of handwriting or hand-printing; detection of alterations; photocopier and computer manipulation; restoration or decipherment of erased and obliterated writing; visualization of latent impressions; the identifica-

tion of printing processes; reassembly of shredded documents; the dating of documents; and differentiation of inks.

The most common examination is comparison of handwriting or handprinting. Authorship of any type of document may come into question during an investigation

Everyone has similarities in their handwriting; otherwise we wouldn't be able to read what each other writes.

The Forensic Document Examiner trains for two to four years in the study of handwriting and other document-related problems. It is the expert's responsibility to examine every element of a writing, including the minute details, and to look for both similarities and differences between known and questioned writing.

Given enough writing evidence, both known and questioned, the forensic document examiner may be able to identify or eliminate a suspected writer of having prepared a questioned document. The examiner is often called to testify in court and present exhibits to demonstrate the opinion.

The section at right constitutes a tour through the Questioned Documents Unit. ■



Karen "K.C." Chiarodit, Sr. Examiner of Questioned Documents, in the LAPD crime lab.

## THE ALIVE! INTERVIEW

# 'You're Making a Difference'

**Alive!: Thanks for giving us a tour today. For our readers, explain what Questioned Documents does.**

KAREN: Generally we examine documents to determine their source, their authenticity or authorship. That usually involves a handwriting comparison to determine if one person wrote the document in question, or it can include examination for alterations, obliterations, whether a document is counterfeit, how a document was prepared, the facts surrounding the document and how it was handled subsequently.

**That includes an examination of handwriting styles, of paper, of ink, and maybe creating some sort of sequence or history of the document, too?**

KAREN: Yes, and printing processes, that sort of thing.

**Pretty much anything around writing or printing on a document is what you look at?**

KAREN: Yes.

**How has the process of what you do in this unit changed over the years?**

KAREN: When I first started, we had a lot more handwriting cases. Now some cases don't involve handwriting at all. Some do involve handwriting, and then you do an ESDA for indentations. You do a VSC to look at the inks. In the old days, it was more handwriting-based. Now because we have more technology, we can do more things.

**Do people write less than they used to?**

KAREN: Yes, people do write less, so we have fewer handwriting cases. That's one of the reasons. And the other reason is because a lot of things are copied now instead of originals, it makes it difficult for us to do our exams.

**Explain that a little bit more.**

KAREN: Sure. For instance, checks. When I started, we looked at a lot of checks. Now I haven't seen a check in a long time because they're all microfiched within, I believe, 24 hours. And then they're gone. So we don't really look at checks anymore.

**And there's a lot of direct deposit, too.**

KAREN: Yes.

**Did you start out in this department? What was your career path?**

KAREN: My first 18 months I was actually a Fingerprint Classifier.

**And that was pre-database.**

KAREN: Yes, today they are called Fingerprint Identification Experts. I would look at rolled fingerprints, classify them and hand search to determine if that person has been arrested before. It wasn't latent prints. It was all from arrestees.

*On July 2, Alive! editor John Burnes interviewed Karen "KC" Chiarodit, Sr. Examiner of Questioned Documents, 34 years of City service. Her last name is pronounced Share-oh-dee; she is the daughter of the late LAPD Officer Lawrence Chiarodit. The interview took place in her office in the LAPD Crime Lab. – Ed.*

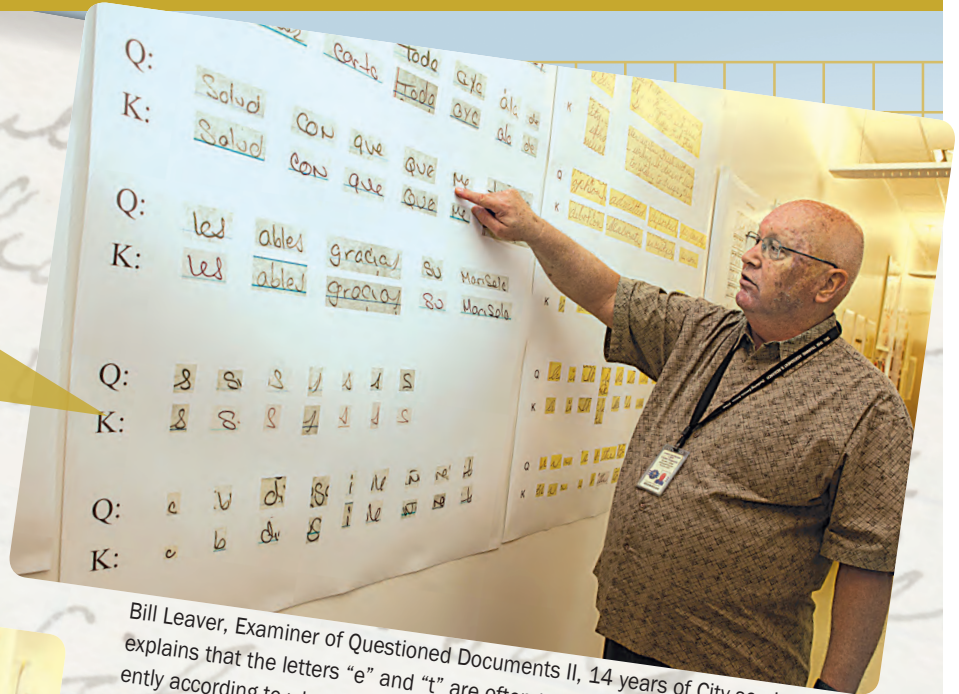


Alive! Feature

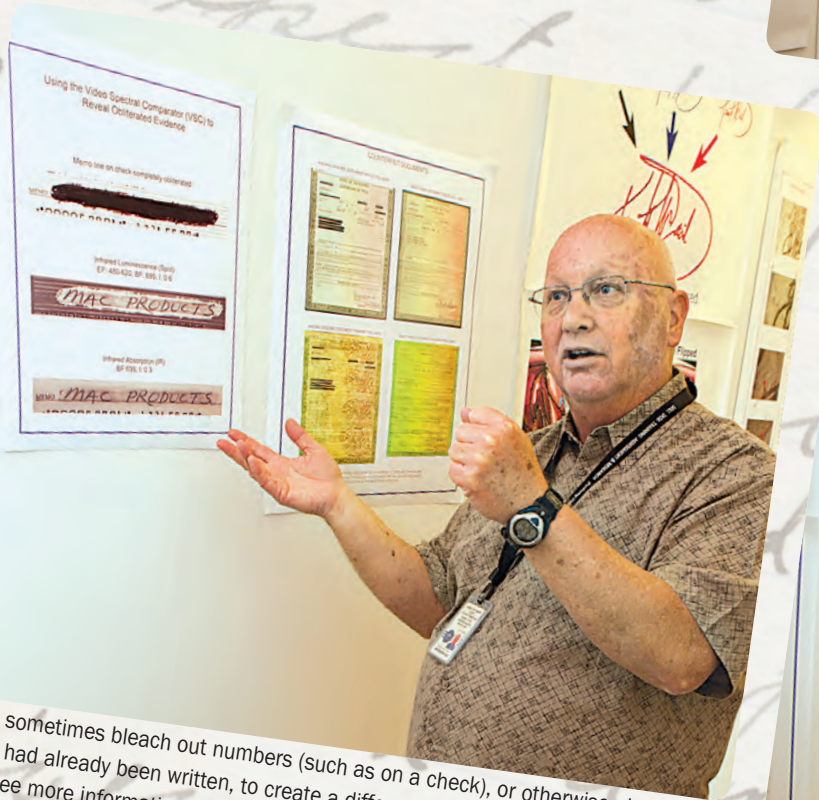
CSI:LA LAPD SCIENTIFIC INVESTIGATION DIVISION: Questioned Documents

**The Displays**

Individual offices for the Examiners are private. Work typical of the kind performed in the offices is displayed across the hallway from the offices.



Bill Leaver, Examiner of Questioned Documents II, 14 years of City service, explains that the letters "e" and "t" are often telltales. They can be written differently according to where they appear in a word, but, when compared to a known exemplar, they can still be matched. In this display, the "Q" on the board indicates the handwriting that is being questioned, and the "K" on the board indicates handwriting that is already known to have come from a particular person. "The challenge is getting enough of a (known) example," Bill says.



Criminals sometimes bleach out numbers (such as on a check), or otherwise alter something that had already been written, to create a different result. By using different light sources (see more information under "Alternate Lighting"), examiners can more easily see what is original, and what isn't.



Criminals who think they are clever will try to fool the police by tracing and trace it to copy someone else's handwriting exactly. They will take a sample and trace it. The problem with that, as Bill Leaver explains, is that no one writes exactly the same way twice. In other words, the writing was too perfect. While everyone writes with certain characteristics, an exact match is extremely unlikely. In the case detailed in this display, someone had attempted to send themselves a death threat trying to mimic someone else's writing. Bill was able to use a clear plastic overlay to determine the handwriting was an exact duplicate and therefore forged. "It was too exact to be real," he says.

This chart demonstrated how a document can be bleached. The bleached portion shows where the original writing crossed the printed line on a form leaving gaps in the line.



In this example, someone had added marks to an already-written check to increase the amount of the check. By using alternate lighting, examiners were able to see the indent marks of the original writing.



Here, Michael Butorac, Examiner of Questioned Documents II, 25 years of City service (and set to retire before press time), explains a fraud case that he worked. In this case, someone had tried to mask their own telltale idiosyncrasies. But by comparing those from the questioned document against known exemplars, Michael was able to document the fraud. "Even when people try to mask it, there are still telling details," he says.

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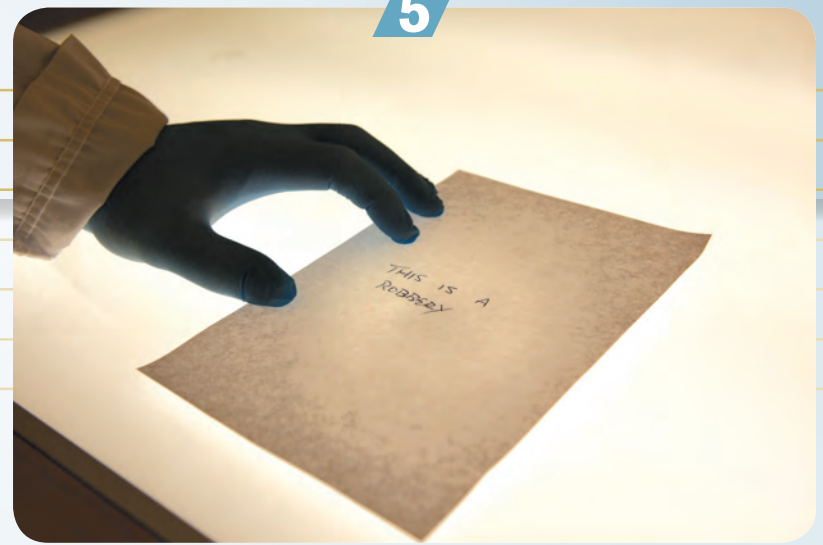


# LAPD Fakes and Forgeries

— continued

## ESDA (Electrostatic Detection Apparatus)

Often people use notepads to write a message, and then remove the top page to remove any trace of the message. But by using a special technique, examiners often can see via indentation what was written on the pages above that “blank” sheet. In addition, examiners sometimes can determine the sequence in which text was written on the sheets above the sheet being tested. The ESDA machine can often determine what was written on a sheet several sheets above the one being tested.



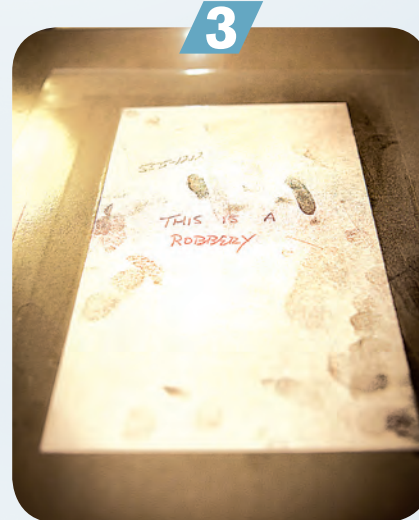
Using a light table, Bill Leaver examines evidence the ESDA machine just processed.



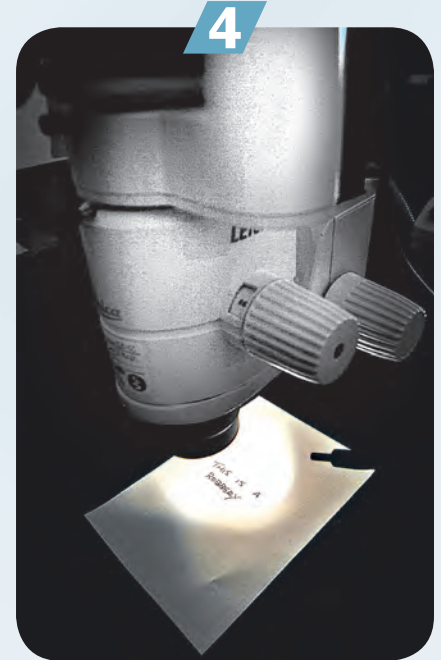
In this demonstration (not actual casework), a “blank” sheet is placed on the top of the ESDA machine.



A thin plastic Mylar sheet is placed on top of the sheet of paper to protect the evidence. The sheet is made smooth with a roller. With the machine on, air pulls the sheet to the bed, and a slight electrostatic charge is given to the sheet. Then, a special toner is poured on top of the blank sheet (covered in plastic).



The toner highlights the indentations, and examiners can then read what was written on the top sheet of the pad. This process can also reveal fingerprints, which the Questioned Documents Unit passes along to the Latent Print Unit for processing. (This sheet is for demonstration purposes only and is not actual casework.)



Sometimes, by using light at an angle, examiners are also able to see the indentations, and therefore what was written on a sheet above this “blank” one.

## THE ALIVE! INTERVIEW – continued

Rolled prints are a lot different than when you're looking at latent prints. Latent Prints is a lot harder.

**A latent print is what they lift off of a TV if it had been stolen, something like that.**

KAREN: Right. Rolled prints, is what happens when you get arrested. So I was doing that for about 18 months, and then this position came up. At the time it was a trainee position.

### Still Some Old-School

**Is the process that you use here, is it more technological than it was when you started, or is the process still kind of one-on-one analysis and looking at the way Ts are crossed, for example? At least to me, police work and investigations have gone very technological. Are you about as technological as everyone else, or less so or more so?**

KAREN: The handwriting comparison hasn't changed. We look at it exactly the same way today as they did a hundred years ago. But other things having to do with documents have evolved. For instance, the ESDA, which stands for Electrostatic Detection Apparatus. You've seen it in action. It actually can make a permanent copy of the indentations, but when I first started it didn't even exist, so we used side lighting. We still use side lighting today, but if you want to make a permanent impression, you have to use the ESDA. You could sometimes do it with photography, and we did used to do that in the old days, but you're not going to always see what you need to. The weaker the impressions, the better it works on the ESDA. The deeper the impressions, the harder it works on the ESDA. So if you've

got, say, a second sheet with typewriting on it, you're going to have better results looking at it with side lighting.

So in that case we might go a little “old school,” but for the most part the ESDA is the way to do it. As far as the VSC, it's an alternate light source, so in the old days if we were trying to see if there was a tracing, we would use photography using different filters. And we got limited results compared to what we can get today.

**Do you see any typewritten pages anymore?**

KAREN: When we see them it's usually a cold case, so when everyone says, “Let's get rid of the typewriters. We don't use them anymore,” we actually do, because the LAPD has a Capitalize Cold Case Squad.

**Do you have typewriters here that you use to see what kind of a machine produced the evidence?**

KAREN: We have typewriter standards. There's also another program that is computer based that we can search.

**Otherwise it might require hundreds and hundreds of typewriter models.**

KAREN: Yes.

### Reality vs. TV

**How different or the same is what you do from what people see on television?**

KAREN: The biggest thing is that, on TV, they usually take the handwriting and one signature from a driver's license, “Oh, it's the same,” in about two seconds. Well, first of all, we would never make a comparison like that. You can't take a signature from a driver's license and look at a diary and tell anything about it. We would need a lot more exem-



Karen “K.C.” Chiarodit, Sr. Examiner of Questioned Documents, in her office in the LAPD crime lab.

plar [examples], obviously. We would need exemplar in the same manner as the question is written, and it would take us hours, sometimes days to do the comparison.

**What one thing, or two things, do you wish people knew about what you do that they don't know?**

KAREN: Well, I wish that people didn't think that we did graphology and told you your personality, or your future.

**People really think that?**

KAREN: Oh yes. Everyone assumes we do.

**People will think that you can determine personality by looking at handwriting...**

KAREN: Yes, and they're very disappointed to find out we don't. They'll just say, “Oh, you don't! Oh, is that all you do?”

**All you do is solve crimes.**

KAREN: Exactly.

## Interesting Cases

**Talk about a few of the more interesting cases that you have worked.**

KAREN: Probably the most interesting historically was the SLA case...

**That's the Symbionese Liberation Army from the 1970s?**

KAREN: Yes, Kathleen Soliah [later known as Sara Jane Olson – Ed.] was a member. She wasn't the only one, but she was part of the group that planted two bombs under two different police cars. She was indicted, but then she went underground for about 25 years. Then she was eventually found as a soccer mom in Minnesota, and they arrested her. They brought her back to Los Angeles to stand trial. That became a three-year case. There were so many documents, and you couldn't put her on trial without putting the whole SLA on trial because of the conspiracy. So it got to be a very, very big case, and there were a lot of documents in a lot of different locations.

**Wow. Were you the lead in the Soliah case?**

KAREN: I was the only person who examined the handwriting.

**What specifically were you tasked to do as part of the evidence in that case?**

KAREN: There were thousands. That was the most documents I've ever looked at on any case. But one that was most significant was a letter. [Soliah] sent away to buy the bomb fuse, because you couldn't order it online.

**Not in the 1970s.**

KAREN: She had to send away for it, and so I identified her on that letter. There were a lot of other documents.



# Alive! Feature

## CSI:LA LAPD SCIENTIFIC INVESTIGATION DIVISION: Questioned Documents

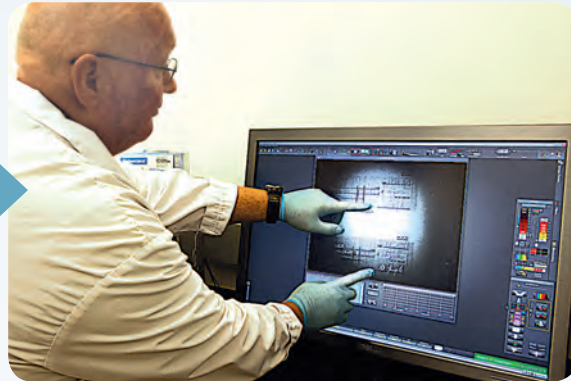
### Alternate Light

Modern scanning and lighting technology can produce results far more detailed, and far more wide-ranging, than what old manual equipment could produce. And modern technology does not run the risk of altering or destroying the original evidence.

Examiners use a VSC – a Video Spectral Comparator – to examine the evidence under different wavelengths of light. Changing the light wavelength can reveal many different aspects of the evidence, including whether it had been overwritten or bleached, and whether a different ink was used to alter the writing on a document.



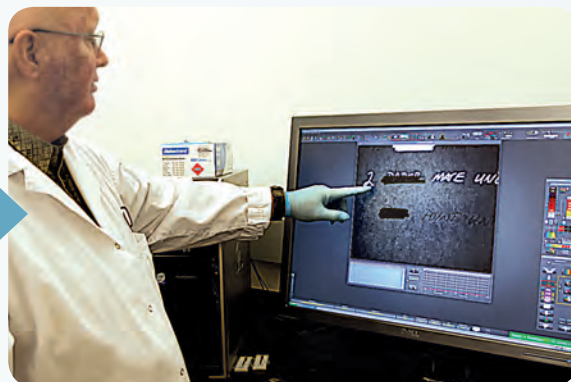
Bill Leaver has scanned a check, and the scan is displayed on the monitor. This shows the evidence under normal light.



Changing the light source to infrared tells a different story – the check had been altered. This is not actual casework, but a check used for demonstration.



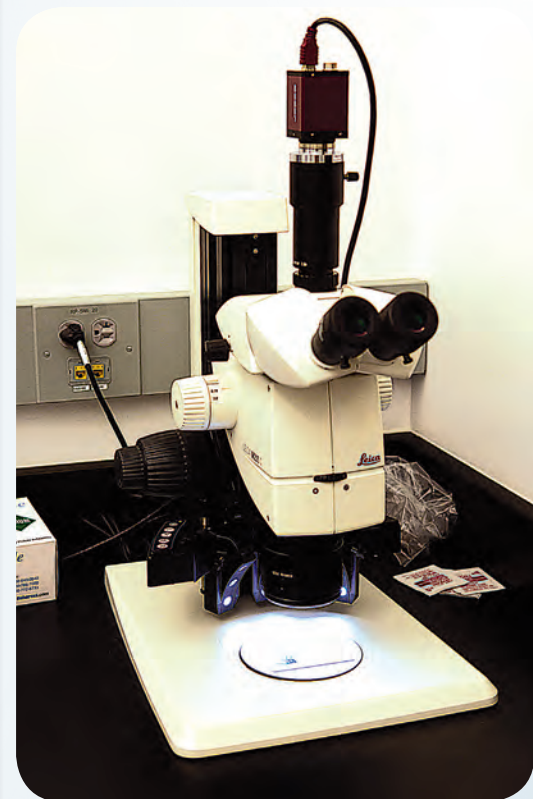
A note containing obliterations, seen by the naked eye.



The same note under infrared light. Infrared luminescence reveals the original writing under the obliteration.

### Stereoscopic Microscope

Sometimes examining a piece of evidence is as simple as placing it under a microscope and looking at it. Under the microscope here is the driver's license of *Alive!* editor John Burnes. He was examining the license's microprinting, a valuable tool used by the state of California to make counterfeits very difficult to produce.



**To determine that the woman who was the soccer mom in Minnesota was, in fact, the same woman – is that part of what you did?**

KAREN: Yes.

**And how did it end?**

KAREN: She pled guilty.

### A Passion for It

**You light up when you talk about what you do. What about this work fulfills you?**

KAREN: Well, every case is different. You don't get bored, and you do feel like you're making a difference.

**Even after 25 years.**

KAREN: Well, you are

**Talk about the special skills and dedication of your crew, of the people who work for you.**

KAREN: We have the best Unit in the Division, and one of the reasons why is this: Document Examiners are hired for this unit and only this unit. You either work here or you don't. So we put a lot of effort into hiring the right people. We get along as a unit. When a detective walks in with a case, everybody will say, "How can we help you? What can we do?" And we try to get our work done as quickly as possible.

Everybody here is very skilled and helps each other. You've got Bill with 36 years. Jane is the newbie with eight years. In a lot of units, the person with eight years is the veteran. Here you've got 36 years, 34 years, 19 years, 11 years, eight years. Everybody in here has a lot of experience.

**They seem really comfortable with each other.**

KAREN: We're lucky, because everybody here gets along, and we'll help each other.

**How do people train for this?**

KAREN: We hire people with a four-year degree, but it can be in anything. For DNA you have to have a lot of biology. I don't care what your degree is in because we give you two years of on-the-job training. We teach you ourselves, it's really an apprenticeship-type role; we have a curriculum, and we teach in modules.

So the first thing you learn is ethics, and then it goes on. We teach you how to write a report. And then handwriting's the big one, but we'll teach you how to do an ESDA, and you're constantly tested after each module. It takes so long because it's like cutting crystal. You have to do it over and over again. The handwriting is what takes so long. Everything else doesn't take as long. You can't learn handwriting overnight. And then even after you're trained, your cases are still monitored for more than a year. And then about 70 percent of our cases are tech reviewed.

**Do you review all the work that your staff does?**

KAREN: Pretty much; I do most of the reviews.

### Moving Forward

**What challenges does this unit face as you move forward?**

KAREN: Fewer original documents. It's harder and harder for detectives to get originals. Things are just either destroyed or nobody's writing anymore. It's shifted. We get different types of cases, and the types of cases we get now tend to be a little bit more complex than what I first had when I first came in.

**Thank you for this interview.**

KAREN: You're welcome. ■

### Special Thanks!

*Alive! thanks everyone in the Questioned Documents Unit, but especially Bill Leaver, who lead us on a tour of the lab just after undergoing a treatment for skin cancer. Bill was brave enough to not mind being photographed. Alive! respects the dignity and reality of all City Employees, whatever life may throw their way, and we thank Bill for his courage. – Ed.*



The Questioned Documents Unit, from left: Karen "KC" Chiarodit, Sr. Examiner of Questioned Documents, 34 years of City service; Michael Butorac, Examiner of Questioned Documents II, 25 years; Tim Cheadle, Examiner of Questioned Documents II, 10 years; Jane Rodriguez, Examiner of Questioned Documents II, 8 years; and Bill Leaver, Examiner of Questioned Documents II, 14 years (but more than 40 years in law enforcement, 36 years in documents). Not pictured: Miriam Angel, Examiner of Questioned Documents II, 19 years.