

PREFACE, Not Exactly

Dear All,

Welcome to A. Chem. Commun., an unique electronic publication for A. Chem. Students (Chem 260) of University of San Francisco.

"... Okay, something about the theory, concept, lab techniques ..."

"... Oh my goodness... no more boring stuffs...."

"... Don't you know that, I've already suffered from the lecture and the lab report.... You know I need to submit my lab report by Next Tuesday"

"... Leave me alone"

I am sorry, I think in this communication, you have some difficult to find something that really really boring (I will try my best, anyway)....

COME ON... LET'S DISCOVER ANOTHER FACE OF THE BORING
STUFF.....

ANALYTICAL CHEMISTRY

Cheers,

The Chemical Hazardous

"DAD..... HELP" Carol shout.



HELP... A KILLER!

It was a human skeleton. Carol's father called the police. While digging in the garden of a house outside of town, he's a landscape gardener, he found a large bone. When he continued to dig, he found more. It soon became apparent that he had discovered a human skeleton. He immediately directed his workers to stop and leave the garden. He then called the police and explained what he had found.



The police arrived moments later and placed yellow tape around the garden. When the detectives arrived, they examined what Carol's father had found and called for a forensic scientist to examine the bones and direct the digging of the rest of the garden to learn if there were more.



Carol's father called home to tell her mother and her what had happened. Carol bicycled out to see for herself. When she got there she saw news trucks and police cars and a crowd of people. A reporter was talking to her father and pushing a microphone into his face.

The scientist was a petite woman with glasses. She looked at the bones for a few moments and told the detective that they were indeed human bones and that they had been in the earth for a long time. However, because the earth in the area was dry, it was difficult to say how long without further tests. She then turned to the examination of the remainder of the garden.

Another skeleton was found a short distance from the first. And then another. And then the skeleton of a child was discovered.

Carol thought that the scientist looked very concerned. The woman then approached the chief detective. "You'd better put a guard out here for a few days at least," Carol heard her say.

"Looks bad, does it?" the detective asked.

"Not too bad," the scientist replied. "I'll have to do some tests of course, but it appears that we've stumbled on an old Indian burial ground. Probably been here for three hundred years. I suspect that when they built that house a hundred years ago, they just skirted the edge of it. The guards will be needed to protect it against looters when the news gets out."

"No crime then," the detective said.

"No crime," the scientist said. She then went over to talk to the reporters and tell them what was found.

"Will you get a reward or a souvenir?" Carol asked her father.

"No," her father responded. "I'm sorry that I disturbed them," he said.



Hey Guys,

Besides being a Biochemist, Chemist, Medical Doctor,
Pharmacist ... Have you ever think about to be a Forensic
Scientist... The one you've seen on TV: NYPD

NO, no, no... not the detective, but the one who find all the
evidences and present it on the court, PROFESSIONALLY!



WHAT DOES A FORENSIC SCIENTIST DO?

A forensic scientist is a man or woman who practices a science for the purpose of legal proceedings. For instance, in many instances modern crime detection has become a scientific endeavor. The investigation of crime often includes scientific testing and research to determine whether a crime has been committed, what was the nature of the crime and who committed it.

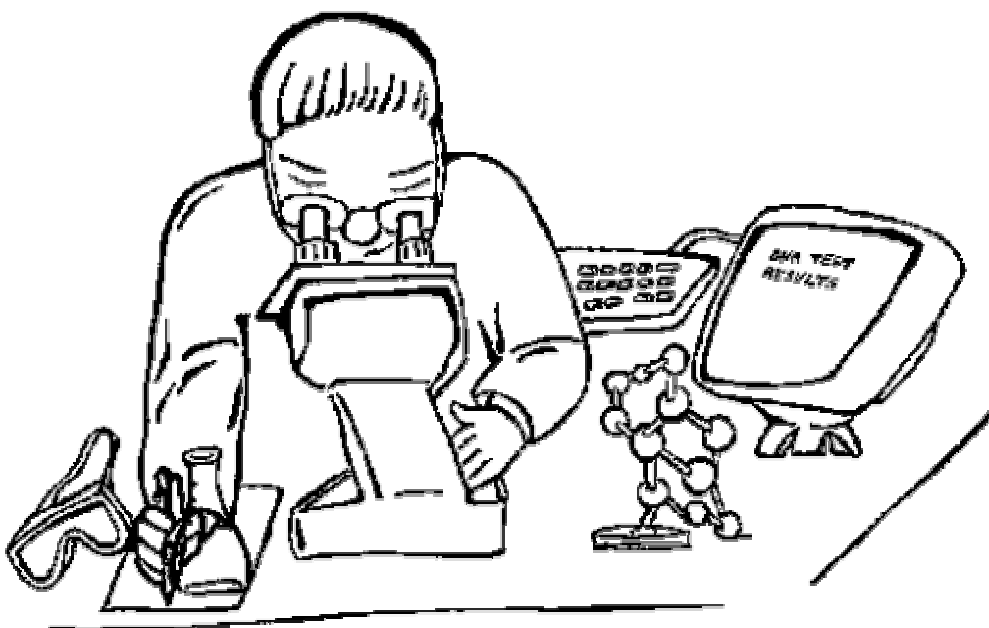
The scientific efforts used include the examination of remains, fingerprint identification, soil sampling and other scientific tests. Many crimes remain unsolved, but the use of science in the detection of criminal behavior and the advances in forensic science have made that number the smallest it has ever been.

The number of different forensic scientists is as large as the number of scientists and includes all scientific disciplines: psychology, psychiatry, archeology, geology, pathology and many others. The forensic scientist must study and work for his or her position as does every other scientist.



An Interview with Forensic Scientist

Gary Molina



I remind myself of the job's importance and how it helps victims.

"DNA test reveals prisoner's innocence." You've probably read headlines like this, but what does it mean? We asked Gary Molina, a forensic scientist who tests DNA for the Texas Department of Public Safety. ["Forensic" means related to the legal system.] Because of Gary and others like him, the justice system has convicted many guilty people to jail and freed some innocent ones. These days, scientists are more important in solving crimes than ever before.

DNA--Deoxyribonucleic Acid, the substance that makes up your genes--decides what you look like and more. This "blueprint for you" resides in the center, or nucleus, of almost every cell in your body. No two people (except identical twins) have exactly the same DNA.

Forensic scientists use DNA tests to identify a pattern or "profile" of DNA left at a crime scene. They can get it from blood, saliva, skin, hair--almost anything the criminal left behind. By comparing this "DNA fingerprint" with the DNA of a suspect, scientists can tell the likelihood of the suspect's being at the scene.

We interviewed Gary in his office and lab in downtown Austin. He shares the building with the famous Texas Rangers, and often assists on their cases. Posters line the hallway walls, describing how DNA helped solve some famous Texas crimes.

Despite the good DNA testing can do, it can be stressful. There's no room for mistakes. But

when work seems hard, "I remind myself of the job's importance and how it helps victims," Gary says. If, like Gary, you enjoy science and want to fight crime, forensic science might be the job for you!

What exactly do you do?

My work falls into three categories. First, I test evidence DNA here in the lab. Then I write a report of the findings. Second, if the case goes to trial, I may testify about the results. Finally, sometimes, when a crime occurs in a small town that doesn't have its own lab, we go there in our mobile lab and take evidence at the actual crime scene. Usually, though, the investigators bring the evidence to us.

What's the coolest part of your job?

Helping to solve crimes.

What's your favorite part?

I get to combine two of my interests: public service and science.

How has your job changed over time?

New techniques have changed it a lot. In 1992 when I started, all we could do was identify blood type and some proteins from blood samples. Now, with DNA testing, we can get a lot more information and not just from blood.

How do people react when they learn what you do?

They're very interested and want to hear stories.

Tell me a story about something odd that happened at work.

You can find unexpected items at crime scenes. In one case, the murder suspect was wearing jeans with a "not guilty" brand label on the back. But the jeans had the victim's blood on them, so it was pretty clear that the suspect was guilty. I keep a photo of that bloodstained brand because it's so bizarre.

Tell me a story about solving some problem at work.

I'm currently working on a case where the only evidence is a piece of chewed gum left at the crime scene. The problem is how to get the DNA out of it. I think I'll be able to do it by freezing the sample and then swabbing it to get some residue of spit left on the gum. Another time, we had to identify a skeleton. We did it by getting DNA from the center of one of the teeth.



How did you become a forensic scientist?

I was always interested in science. I liked my science classes in school, particularly the labs. I worked in a lab during college and then in a hospital lab afterwards. One day, I saw an ad for this position and got hired.

Where will the job of forensic scientist be ten years from now?

I think the public will know more about DNA testing. More people will enter the field and that'll increase competition for jobs. There probably won't be as many advances in DNA testing as there have been in the last ten years, but we'll be able to collect DNA from even more places than we can today.

What's the next step on your career path?

I like what I do now. Eventually, I'd like to move into management, though the competition for manager jobs is fierce.

What advice do you have for students entering high school?

Enjoy your science classes but don't focus only on science. And keep an open mind about what you want to do. What you end up doing--and loving--might be different from what you originally had in mind.

Keep an open mind
about what you want
to do.



What's the part you like least about your job?

Working on crime cases that involve kids.

What's your average stress level at work?

Being a forensic scientist is pretty stressful. There's always a lot going on, making it hard to focus on one task. And the unexpected always happens. In addition, forensic scientists are often overworked and underpaid. They may work in crowded conditions and often have to train new people.

Is your workload steady or does it fluctuate?

The work is fairly steady. Even when the number of new cases slacks off, there's always a backlog to test.

What disappointed you?

I guess the fact that forensic scientists often don't get credit for their work from the media and prosecutors. We get taken for granted.



What information do you need to keep up in your field and where do you get it?

I have to keep up with technological advances, like new equipment, so I read science journals. Also I need to know about new ways to approach cases and how to work with difficult samples. I usually learn that on the job--by trying it and by watching more experienced people. I also consult with others--coworkers in my lab, calling other labs and attending conferences.

What type of space do you work in?

Lab and shared office.

What's the dress code?

Usually casual; a suit when I'm testifying in court.

Do you usually work alone or with people?

I share space but have my own cases. When we work on investigations, though, we do it as a team.

What kinds of equipment do you work with?

I use lots of equipment and computers in my job.

What role does writing play in your work?

I write reports for prosecutors and investigators.

What role does public speaking play in your work?

In court (can't be too technical but must sound authoritative).

How do interpersonal skills come into play in your work?

Communicate with investigators and prosecutors; need to share equipment with coworkers. If you don't get along, your stress level goes up and concentration goes down. If you enjoy people, you like your job and do a better job.

SOUNDS INTERESTING???? WANTS TO KNOW MORE?????

CHECK THESE OUT

Forensic Chemistry Network:

(you can find the graduate schools which provide master program
on Forensic Science)

<http://www.geocities.com/CapeCanaveral/4329/>

Forensic Scientist:

<http://www.webcoin.net/html/forensic.html>

Forensic Scientist Webquest:

<http://www.ufrsd.k12.nj.us/staffwww/stefanl/Webquest/Evidence/>

All of this volume, some comment? Or

“... leave me alone, what’s the hell with you”

“... Don’t waste my time..... Tomorrow, I need to meet
Susan, and dine with Mary, and ...”

email me: lauv@ace.usfca.edu (cHeMiCaL HaZaRdOuS)