

>>> GOOD MORNING!

GOOD MORNING!

THERE YOU GO.

THANK YOU FOR JOINING US TODAY FOR THE SECOND IN OUR PANEL DISCUSSION SERIES "DEA: WHO WE ARE AND WHAT WE DO."

I'M LORI BEATTY, AND I'M THE DIRECTOR OF THE DEA MUSEUM HERE AT HEADQUARTERS.

OUR PANEL TODAY REPRESENTS THE DEA'S OFFICE OF FORENSIC SCIENCES WITH A MISSION TO PROVIDE QUALITY SCIENTIFIC, TECHNICAL, AND ADMINISTRATIVE SUPPORT TO THE LAW ENFORCEMENT AND INTELLIGENCE COMMUNITIES AND TO THE CRIMINAL JUSTICE SYSTEM AT LARGE, TO ASSIST WITH THE ENFORCEMENT OF CONTROLLED SUBSTANCE LAWS AND REGULATIONS OF THE UNITED STATES.

THERE ARE THREE DIFFERENT DISCIPLINES WITHIN THE FORENSIC SCIENCES DIVISION -- CHEMISTRY, FINGERPRINTS, AND DIGITAL EVIDENCE.

TODAY'S PANELISTS REPRESENT ALL THREE DISCIPLINES.

JONATHAN DUFFY IS A FORENSIC CHEMIST AT THE DEA MID-ATLANTIC LABORATORY WHERE IN ADDITION TO OTHER RESPONSIBILITIES HE ANALYZES EXHIBITS.

I THOUGHT, OOH, HE COMES TO THE MUSEUM AND ANALYZES OUR EXHIBITS, BUT NO.

HE ANALYZES EXHIBITS FOR COURT CASES FOR THE PRESENCE OF CONTROLLED SUBSTANCES.

DIGITAL EVIDENCE EXAMINER JILL MOSSMAN HAS WORKED WITH ALMOST EVERY TYPE OF ELECTRONIC STORAGE DEVICE POSSIBLE.

SHE'S TESTING THAT ONE.

>> YES.

IT WORKS.

>> AND ANNA ZADO IS A SENIOR FINGERPRINT SPECIALIST WITH THE DEA.

BEFORE JOINING DEA, SHE WAS A CRIME SCENE INVESTIGATOR.

THE PANEL MODERATOR, ELIZABETH MOWER, IS OUR CURATOR OF

EDUCATION AT THE MUSEUM.
TODAY'S PANEL WILL SPEND THE
NEXT 30 MINUTES OR SO DISCUSSING
THE OFFICE OF FORENSIC SCIENCES
INCLUDING ITS MISSION, THEIR
ROLES, TRAINING, AND OTHER
TOPICS.

AT THE END WE'LL OPEN THE FLOOR
TO QUESTIONS BOTH FROM PEOPLE IN
THE AUDITORIUM, AS WELL AS THOSE
WATCHING THE LIVE STREAM.

IF YOU'RE WATCHING THE LIVE
STREAM, PLEASE PLACE YOUR E-MAIL
QUESTIONS TO THE E-MAIL ADDRESS
ON THE DEAMUSEUM.ORG HOME PAGE.
I'LL REMIND YOU THIS AT THE END
OF THE PROGRAM.

LIZ?

>> HELLO.

THANK YOU, LORI.

I'M VERY HAPPY TO SEE THAT WE
HAVE GREAT TURNOUT HERE IN
PERSON TODAY AND SAYING HELLO TO
THE FOLKS WATCHING US ON LINE.

I THINK IT WOULD BE WONDERFUL IF
WE STARTED OFF WITH SINCE THE
THEME OF THIS SERIES IS WHO WE
ARE AND WHAT WE DO, IF YOU COULD
ONE BY ONE TELL US WHO YOU ARE
AND WHAT YOU DO FOR DEA.

AND LET'S START WITH JILL.

>> HI, MY NAME IS JILL MOSSMAN.

I'M A SENIOR DIGITAL EVIDENCE
EXAMINER.

I'VE BEEN WITH DEA FOR ABOUT 14
YEARS.

MY JOB IS TO IMAGE, ARCHIVE, AND
ANALYZE ALL FORMS OF DIGITAL
MEDIA WHICH BASICALLY -- WHICH
BASICALLY MEANS I GET PEOPLE TO
CREATE FORENSICALLY SOUND COPIES
OF EVERYTHING FROM DVRs WITH
SURVEILLANCE CAMERA FOOTAGE,
SERVERS WITH PHARMACEUTICAL DATA
BASES, GPS UNITS RECOVERED FROM
BOATS, CELL PHONES, DRONES, AND
ANY SORT OF EXTERNAL HARD
DRIVER.

>> WE'RE GOING TO TALK LATER
ABOUT SOME OF THE EVIDENCE
THAT YOU CAN FIND ON THESE
DEVICES.

LET'S GO TO ANNA NEXT.

>> GOOD MORNING.

MY NAME IS ANNA ZADO, AND I AM A SENIOR FINGERPRINT SPECIALIST WITH THE DISTRICT ATTORNEY IN THE SOUTHEAST WHICH IS LOCATED IN MIAMI, FLORIDA.

I'VE BEEN WITH DEA APPROXIMATELY 17 YEARS NOW.

AND -- ARE WE GOING INTO WHAT WE DO?

>> YES, PLEASE.

>> OKAY.

>> TO DESCRIBE WHAT I DO ON A DAILY BASIS AS A FLOWER FINGERPRINT SPECIAL -- AS A SENIOR FINGERPRINT ANALYST, I SEPARATE THINGS FROM DRUGS USUALLY BY THE FORENSIC CHEMIST WHICH WOULD BE JONATHAN. AFTER HE SEPARATES IT, HE SEPARATES IT AND HE PUTS IT BACK INTO THE VAULT FOR ME.

I TAKE THAT OUT OF THE VAULT, AND I OPEN THAT IN ORDER TO ANALYZE IT FOR FINGERPRINTS PER THE REQUEST OF THE SUBMITTING OFFICER.

ONCE THAT IS DONE, AFTER I FIND THE FINGERPRINTS, I WILL DOCUMENT THE FINGERPRINTS AND PRESERVE THEM WITH PHOTOGRAPHY. I WILL ALSO ENTER THEM INTO A DATA BASE.

I CAN COMPARE THE SUBJECTS THAT THE OFFICER HAS SUBMITTED TO SEE IF THEY'RE IDENTIFIED TO THAT PARTICULAR SUBJECT.

IF THEY ARE NOT IDENTIFIED TO THAT SUBJECT, THEY WILL THEN GO INTO ANOTHER DATA BASE WHICH IS THE FBI'S NGI DATA BASE WHICH THEY ARE SEARCHED FOR BOTH CIVILIAN AND CRIMINAL DATA BASE S, AFTER THAT'S IDENTIFICATION THERE, THE REPORT IS WRITTEN, AND THE REPORT'S WRITTEN, AND WE -- WE ALSO TESTIFY IN COURT TO THOSE RESULTS WHEN WE'RE CALLED UPON TO DO SO.

AND LAST BUT NOT LEAST, WE ALSO RESPOND TO DRUG INVESTIGATIONS OUTSIDE OF THE LABORATORY PER REQUEST OF THE AGENTS.

>> SO IT'S A VERY COMPLICATED PROCESS.

BUT WITH VERY DEFINITE STEPS
ALONG THE WAY.

>> YES, WE HAVE MANY STEPS ALONG
THE WAY.

>> MAKES US IMPORTANT.

JONATHAN, CAN YOU TELL US WHO
YOU ARE AND WHAT YOU DO?

>> SURE.

GOOD MORNING.

MY NAME'S JONATHAN DUFFY, I AM A
FORENSIC CHEMIST AT THE DEA
MID-ATLANTIC LABORATORY IN
LARGO, MARYLAND.

AS A FORENSIC CHEMIST MY PRIMARY
DUTIES ARE TO USE A VARIETY OF
ANALYTICAL TECHNIQUES AND
CHEMICAL INSTRUMENTATION TO
ANALYZE EVIDENCE FOR THE
PRESENCE OF CONTROLLED
SUBSTANCES.

I GET CALLED UPON TO COURT TO
PROVIDE EXPERT WITNESS TESTIMONY
ON MY CONCLUSIONS.

AND I ALSO PROVIDE TECHNICAL
ASSISTANCE TO LAW ENFORCEMENT
SUCH AS WITH PRESUMPTIVE
TESTING, TRAINING, OR
CLANDESTINE LABORATORY
PROCEDURES.

>> SO NOW JONATHAN, ABOUT HOW
MANY OFFICES DOES DEA HAVE FOR
YOUR SPECIALTY OR YOUR
PARTICULAR BRANCH?

OFF THE TOP OF YOUR HEAD, WHERE
ARE THEY LOCATED?

>> SO THE DEA HAS SEVEN FIELD
LABORATORIES FOR CHEMISTRY.
WE HAVE NEW YORK, D.C., MIAMI,
DALLAS, CHICAGO, SAN FRANCISCO,
AND SAN DIEGO.

WE ALSO HAVE A SPECIAL TESTING
AND RESEARCH LABORATORY IN
VIRGINIA AND A SATELLITE
LABORATORY IN NASHVILLE.

>> ALL RIGHT.

ANNA, YOUR SPECIALTY HAS A
VARIETY OF OFFICES, AS WELL.

>> THAT'S CORRECT.

WE HAVE JUST THE SEVEN.

SO THE SEVEN FIELD LABORATORIES
ALL HAVE A FINGERPRINT
SPECIALIST WITHIN THE
LABORATORY.

>> AND WHAT ABOUT DIGITAL?

>> FOR DIGITAL, OUR PRIMARY LAB IS LOCATED IN VIRGINIA, BUT WE ALSO HAVE SATELLITE OFFICES LOCATED IN NEW YORK, CHICAGO, HOUSTON, AND SAN DIEGO AND UTAH. BUT UNLIKE THE CHEMISTRY LAB, OUR SATELLITE OFFICES ARE MUCH SMALLER AND ONLY TWO TO THREE PEOPLE PER OFFICE.

>> OKAY.

IT SEEMS LIKE ALSO THE ABILITY TO WORK AS A TEAM LIKE USING TECHNOLOGY ACROSS THE COUNTRY AND COMMUNICATIONS IS PROBABLY VERY IMPORTANT WHEN YOU'RE WORKING ON CASES.

>> YES.

>> I ALWAYS FIND IT REALLY INTERESTING TO KNOW PEOPLE'S BACK STORY.

LIKE HOW DID YOU FIND OUT ABOUT THIS FIELD, HOW DID YOU COME INTO THIS FIELD.

YOU KNOW, IF YOU CAN TELL ME -- LET'S START WITH ANNA.

IF YOU CAN TELL US A LITTLE ABOUT YOUR STORY AND HOW YOU DECIDED THAT YOU WANTED TO BE A FINGERPRINT SPECIALIST.

>> MY STORY STARTS REALLY AT MICHIGAN STATE UNIVERSITY IN THE YEAR OF 1989.

I WENT TO MICHIGAN STATE THINKING I WAS GOING TO BE A CHEMIST.

I HAD CHEMISTRY ON MY MIND, BIOLOGY ON MY MIND.

BUT I DID NOT UNDERSTAND WHAT I WAS GOING TO DO ONCE I GRADUATED WITH THESE DEGREES.

I DID GET A LITTLE FRUSTRATED DURING MY -- I THINK MY JUNIOR YEAR AND SAID TO MY COUNSELOR, I NEED HELP FIGURING OUT WHAT TO DO WITH MY LIFE.

THIS IS BEFORE O.J.

AN INTERESTING TIME PERIOD.

IT'S 1989, '90, AND SHE SAID, WE HAVE THIS PROGRAM CALLED FORENSIC SCIENCE.

I SAID, OKAY.

NEVER HEARD OF IT.

SHE SAID IT HAS LAW CLASSES, AND IT ALSO HAS THE SCIENCE CLASSES.

AND EVERY SINGLE CLASS THAT YOU HAVE WILL TRANSFER OVER INTO THE PROGRAM.

I SAID, THAT SOUNDS PRETTY INTERESTING BECAUSE IT HAD A BUNCH OF LAW CLASSES TO GO WITH IT.

I SAID THAT SOUNDS LIKE SOMETHING I'M GOING TO BE INTERESTED IN.

I SWITCHED OVER AND GRADUATED WITH THE FORENSIC SCIENCE DEGREE.

THEN I HAD TO TRY TO FIND A JOB. SO PERSONAL LIFE GOT IN THE WAY. EVENTUALLY, THOUGH, I DO BEG MY WAY -- BEG MY WAY INTO BEING A CRIME SCENE INVESTIGATOR FOR A POLICE DEPARTMENT IN TEXAS.

ME PERSONAL LIFE WENT FROM MICHIGAN TO TEXAS, SO I HAD TO FIND A JOB DOING THAT.

I SAID, YOU KNOW, I DIDN'T GO TO SCHOOL DO CRIME SCENE.

I WENT TO SCHOOL TO BE A CHEMIST.

BUT LIFE TAKES YOU IN DIFFERENCE WAYS, SO I BECAME THE CRIME SCENE INVESTIGATOR.

I DID THAT FOR 8.5 YEARS.

WITH THAT SAID, CRIME SCENE INVOLVES FINGERPRINTS.

I RESISTED FOR A BIT AND SAID I STILL AM A CHEMIST.

I SOMEHOW ENJOYED LEARNING HOW TO DO FINGERPRINTS.

AND WITH THAT SAID, BECAME A CERTIFIED LATENT PRINT EXAMINER AS WELL AS A CERTIFIED CRIME SCENE INVESTIGATOR.

MY GOAL WAS ALWAYS TO BECOME PART OF THE DEA, EVEN BACK BEFORE I WAS HERE.

MY GOAL WAS EVENTUALLY TO GET WITH DEA AFTER I BECAME CERTIFIED WHICH IS ONE OF THE REQUIREMENTS IS FOR DEA, TO BE A FINGERPRINT SPECIALIST.

I PURSUED IT AND WAS FORTUNATE ENOUGH TO GO FROM TEXAS RIGHT INTO THE DALLAS LABORATORY.

2002 IS WHEN I WAS HIRED.

AND I TRANSFERRED OVER TO MIAMI LATER ON IN 2006.

WHERE I'VE BEEN EVER SINCE.
IT'S BEEN A WONDERFUL PATH.
>> IT SEEMS LIKE LIFE EXPERIENCE
IS REALLY IMPORTANT AND IT'S
TAKING YOU FROM THIS EXPERIENCE
TO THIS EXPERIENCE TO WHERE YOU
ARE COMING IN TODAY.
I'M GOING TO GO TO JONATHAN NEXT
BECAUSE I THINK THAT YOU HAVE
THE LEAST EXPERIENCE AT DEA.
SO SOME OF WHAT YOU TALK ABOUT
COULD BE ALSO RELEVANT TO OUR
STREAMING AUDIENCE THAT MIGHT BE
LOOKING FOR A MAJOR IN COLLEGE
RIGHT NOW.
>> SURE.
YEAH.
I FORGOT TO MENTION I'VE BEEN AT
DEA ALMOST FOUR YEARS.
WHERE MY CAREER BEGAN, I WAS AN
UNDERGRADUATE STUDENT AT PENN
STATE UNIVERSITY, AND I WAS
UNDECIDED.
AND YOU KIND OF PICK A FEW
MAJORS THAT YOU MIGHT BE
INTERESTED IN.
NONE OF THE ONES THAT I PICKED
WERE CHEMISTRY OR FORENSICS, BUT
I THOUGHT I WOULD BE INTERESTED
IN ARCHITECTURE AT THE TIME
BECAUSE I THOUGHT I WOULD LIKE
BUILDING THINGS AND DESIGNING
THEM, AND I TOOK A CHEMISTRY
CLASS AS A PREREQUISITE.
I REALLY LIKED IT.
IT WAS A LITTLE CHALLENGING, AND
I LIKED BEING IN THE LABORATORY.
I STARTED TO TAKE MORE CHEMISTRY
CLASSES.
I TOOK ORGANIC CHEMISTRY AND
ANALYTICAL CHEMISTRY, AND I
THINK WHAT I REALIZE SUDDEN
THERE'S KIND OF BUILDING IN
ARCHITECTURE IN CHEMISTRY.
I LIKED USING MOLECULES AND
USING INSTRUMENTS TO WORK
BACKWARDS AND DETERMINE UNKNOWN
STRUCTURES, STUFF LIKE THAT.
AND I WASN'T ARTISTIC TO DO
ARCHITECTURE.
I LIKED IT, IT WAS LITTLE MORE
ABSTRACT.
SO I WORKED PART-TIME AT THE
POLICE STATION WHERE I WORKED AS

AN EVIDENCE TECHNICIAN.
AND THEY THOUGHT ME HOW TO
PROCESS STOLEN ITEMS FOR
FINGERPRINTS, STUFF LIKE THAT.
ONCE I GRADUATED, I MOVED TO
THIS AREA, AND I DID SOME
CONTRACT WORK, I WAS DOING
FINGERPRINTS OR CONSULTING, AND
I STARTED GOING TO GRAD SCHOOL
AT G.W. PART TIME.
DURING THAT PROCESS I GOT HIRED
AT THE DEA.
>> SO WOULD YOU SAY THAT INSTEAD
OF BUILDING THINGS YOU'RE NOW
TAKING THEM APART.
>> RIGHT.
DEFINITELY.
>> OKAY.
>> ESPECIALLY OUR INSTRUMENTS,
TOO.
>> ALL RIGHT.
AND JILL, TELL US HOW YOU BECAME
INTERESTED AND HOW YOU CAME INTO
DEA.
>> WELL SO I THINK OUR LAB IS A
LITTLE UNIQUE IN THAT WE HAVE A
LOT OF EXAMINERS THAT HAVE
DIFFERENT BACKGROUNDS.
SO WE HAVE SOME EXAMINERS THAT
COME FROM THE LAW ENFORCEMENT
BACKGROUND THAT ARE FORMER
POLICE OFFICERS THAT GAINED
THEIR EXPERIENCE THROUGH BEING
THE ONLY FORENSIC EXAMINER IN
THE POLICE FORCE.
AND THEN WE HAVE SOME EXAMINERS
THAT COME FROM THE MORAL
BACKGROUND -- MILITARY
BACKGROUND THAT GAINED THEIR
BACKGROUND WORKING WITH VARIOUS
ELECTRONIC COMPONENTS IN THE
MILITARY.
MY BACKGROUND, THOUGH, IS
ACADEMIC.
WHEN I WAS IN COLLEGE, MY LAST
THING THAT I WANTED TO DO WAS
CHEMISTRY.
BUT I DID WANT TO GET A JOB.
THAT WAS MY GOAL.
SO I HAD AN UNDERGRADUATE DEGREE
IN COMPUTER INFORMATION SYSTEMS
BECAUSE THAT'S WHERE EVERYBODY
SEEMED TO BE GETTING THE WORK
AT.

I WAS WORKING AS AN I.T.
CONSULTANT IN D.C., AND I HAD
STARTED MY MASTER'S DEGREE IN
I.T. SECURITY.
AT THE SAME TIME THAT I HAD
STARTED THE PROGRAM THERE, THEY
WERE STARTING THE COMPUTER
FORENSICS PROGRAM.
AND I THOUGHT, THAT LOOKS KIND
OF INTERESTING, LOOKS NEAT IN
THE MOVIES.
SEEMS A LITTLE MORE TECHNICAL
THAN I.T. SECURITY.
I THOUGHT, HEY, I'LL GIVE THIS A
TRY.
WHILE I WAS WORKING ON MY MAJOR,
I HAD AN OPPORTUNITY TO WORK
WITH THE DEA.
SO I TOOK IT AND RAN WITH IT,
AND HERE I AM.
>> THAT'S -- I ALWAYS THINK OF
LIKE THE MOVIES WHERE THE
DIGITAL FORENSICS SPECIALISTS
ARE SITTING DOWN AT A LAPTOP AND
TOUCHING TWO KEYS AND ALL THE
SUDDEN ALL THE INFORMATION IN
THE WORLD POPS UP ON THE SCREEN
LIKE WHERE THEY'RE AT, AND
WITHOUT GIVING ANYTHING AWAY, I
SUSPECT THAT'S NOT REALLY THE
WAY IT HAPPENS, RIGHT?
>> WELL, I DON'T WANT TO GIVE
AWAY ALL THE SECRETS.
>> RIGHT.
BUT YOU DO GO TO CRIME SCENES.
DON'T YOU?
>> YES.
SO OUR LAB IS CALLED TO GO TO --
ASSIST WITH SEARCH WARRANTS
SEVERAL TIMES A MONTH.
SO OUR PART, WHEN THEY EXECUTE
THE SEARCH WARRANT, WE WILL BE
ALMOST IMMEDIATELY AFTER THEY
SECURE THE SCENE, WE WILL GO IN
TO MAKE SURE THAT THE ELECTRONIC
MEDIA IS SAFE AND PRESERVED, AND
THAT NONE OF THE EMPLOYEES OR
HOMEOWNERS ARE ABLE TO MAKE ANY
CHANGES TO THEIR ELECTRONICS.
>> AS A CRIME SCENE INVESTIGATOR
YOU'VE BEEN TO MANY, MANY, MANY,
BUT YOU'RE A SPECIALIST.
>> IT HAS CHANGED, IT WAS
CLANDESTINE LABORATORIES WITH

THE MAKING OF METH BUT IT'S
SHIFTED NOW THAT FENTANYL HAS
TAKEN OVER THE LAB SITE.
WE DON'T GO TO AS MANY AS WE
-- WE DON'T GO TO AS MANY AS WE
USED TO GO TO.
WE STILL CAN RESPOND FOR
MULTIPLE REASONS, YES.
>> WHAT ABOUT YOU, JONATHAN?
>> THE CHEMISTS AT OUR
LABORATORY, WE ROTATE A SCHEDULE
TO BE THE CHEMIST ON DUTY.
IF THERE'S A CLASS --
CLANDESTINE LABORATORY, WE HELP
FIGURE OUT WHAT KIND OF LAB
THEY'RE DEALING WITH.
IT COULD BE WITH SAFETY, TAKING
MEASUREMENTS, DETERMINING WHAT
EVIDENCE TO BRING BACK TO THE
LABORATORY, AND WHAT TO GO TO
HAZARDOUS WASTE.
>> NOW WHEN WE HAVE VISITOR TO
THE MUSEUM, PARTICULARLY
TEENAGERS, AND THEY ALWAYS WANT
TO KNOW ABOUT THE SUITS.
>> RIGHT.
YEAH.
ACTUALLY, WHEN WE GO TO GIVE
TALKS IN HIGH SCHOOLS AND STUFF,
WE USUALLY BRING A SUIT.
>> YOU BRING A SUIT?
>> THEY'RE HOT.
>> THEY'RE HOT.
OH.
>> HOT INSIDE.
I THINK THAT'S WHAT PEOPLE THINK
OF SOMETIMES.
>> YOU'VE WORN THE SUIT?
>> YEP.
AND ACTUALLY THE TRAINING IS IN
LOS ANGELES, SO WHEN I GOT
TRAINED IT WAS THE MIDDLE OF THE
SUMMER, IN JULY.
AND I WAS WEARING THE SUIT.
SO I WORE A TON OF ICE COLD
TOWELS LIKE ALL AROUND MYSELF
INSIDE THE SUIT.
BUT I ALSO DID A LOT OF HOT
YOGA.
-- YOGA.
>> THAT'S YOUR OUT-OF-OFFICE
TRAINING, HOT YOGA.
WE'RE CURIOUS AS TO SINCE YOU
HAVE LABS ACROSS THE COUNTRY AND

YOU HAVE PEOPLE IN THE LABS WITH YOU AS HOW ARE PEOPLE ASSIGNED TO CASES, OR HOW TO ANALYZE EXHIBITS.

LIKE HOW DOES THAT ARRIVE AT YOUR BENCH OR YOUR DESK?

WE'LL START WITH JONATHAN AGAIN.

>> OKAY, SO I'LL LOOK ON OUR -- ON MY COMPUTER, ON OUR LABORATORY INFORMATION MANAGEMENT SYSTEM AND SEE SOMETHING WAS ASSIGNED TO ME BY MY SUPERVISOR, I'D PICK IT UP, ANALYZE IT.

BUT THE WAY IN WHICH IT'S ASSIGNED, WHEN I FIRST STARTED WORKING, I'D KIND OF WORK A CASE FROM EXHIBIT 1 THROUGH 50.

THE WAY WE DO IT NOW IS WE KIND OF BECAME MORE EFFICIENT WITH ORGANIZING THE SUSPECTED DRUG. AND SO THE CHEMIST WILL ANALYZE A CERTAIN TYPE.

SUSPECTED DRUG FOR, SAY, SIX WEEKS.

SO I CAN BE ASSIGNED THE AMENDMENT EXHIBITS OR -- THE METHAMPHETAMINE EXHIBIT OR COCAINE OR HEROIN, AND I'LL ANALYZE THOSE TYPE OF SUSPECTED EXHIBITS FOR ABOUT SIX WEEKS. AND IN A WAY, IT MAKES THINGS MORE EFFICIENT BECAUSE I KIND OF HAVE EVERYTHING I NEED TO DO THAT ANALYSIS, AND I CAN WORK THROUGH ALL OF THEM.

WHEREAS BEFORE, IF I WAS JUMPING BACK AND FORTH THROUGH DIFFERENT CATEGORIES, I KIND OF WOULD HAVE TO CHANGE MY MINDSET AND WHAT INSTRUMENTS I'M USING.

>> IT SOUNDS LIKE IT'S BECOME A MUCH MORE STREAMLINED, EFFICIENT PROCESS.

>> RIGHT.

>> THAT'S GREAT.

DOES IT WORK THE SAME WAY IN THE FINGERPRINT LAB, OR DOES IT WORK A LITTLE BIT DIFFERENTLY WHEN YOU'RE ASSIGNED AN EXHIBIT?

>> IT'S A LITTLE DIFFERENT.

AGAIN, JOHN, THE CHEMISTS ARE SEPARATING MOST OF OUR EVIDENCE SO WE'RE KIND.

RELYING ON THEM TO GET A FINGERPRINT REQUEST THROUGH THEM.

SO ONCE THEY'RE DONE AND COMPLETED, THEN WE CAN GO GET IT IF THE VAULT ALSO.

IT'S ASSIGNED BY THE SUPERVISOR, AS WELL.

AND WE'RE USUALLY WORKING WITH COURT RUSHES IF THERE'S SOMETHING FOR COURT, IF SOMEBODY NEEDS SOMETHING.

OR WHATEVER PRIORITY AN AGENT MIGHT HAVE IN ORDER TO ESTABLISH FOR, YOU KNOW, ANY SORT OF GRAND JURY, WHATNOT.

SO AFTER THE SUPERVISOR ASSIGNS IT, THEN WE'RE GOING TO GET IT LIKE JOHN DOES, TOO.

WE'RE GOING TO WORK IT AS WE WOULD NORMALLY DO TO MEET WHATEVER NEEDS THAT WE HAVE.

>> ALL RIGHT.

NOW, AM I REMEMBERING CORRECTLY THAT IN DIGITAL FORENSICS THAT PEOPLE ARE DEVELOPING SPECIALTIES IN PARTICULAR KINDS OF DEVICES?

>> YES.

SO WE ARE ALL EXPECTED TO HAVE A GENERAL KNOWLEDGE ABOUT HOW TO IMAGE ALL THE DIFFERENT ELECTRONIC DEVICES.

SO WHEN WE GO OUT ON SITE AND ASSIST WITH A SEARCH WARRANT EXECUTION, WE CAN ALL IMAGE PRETTY MUCH ANYTHING THAT WE SEE.

THEN ONCE WE GET IT BACK TO THE LAB, WE'LL REVIEW IT AND DETERMINE WHAT SPECIALTY IT WILL GO TO.

LIKE FOR INSTANCE, I DO CELL PHONES AS MY SPECIALTY.

SO WHEN WE GET A CELL PHONE THAT COMES IN, THEY'LL KNOW TO SEND IT MY WAY.

IF THERE IS A DAMAGED HARD DRIVE, IT WILL GO TO A DIFFERENT GROUP.

IF THERE IS A DVR WITH A SURVEILLANCE CAMERA FOOTAGE, IT WILL GO TO A DIFFERENT GROUP.

ALL OF THE GROUPS WORK TOGETHER

BECAUSE SOMETIMES WE'LL HAVE A
COMPUTER WITH PASSWORDS THAT
WE'LL NEED TO UNLOCK A CELL
PHONE.
WITH THE SPECIALTIES WE ALL WORK
TOGETHER.
>> WHAT HAPPENS TO THE EVIDENCE
AFTER IT'S BEEN EXAMINED.
>> SO IT DEPENDS ON THE STATE OF
THE EXHIBIT.
MOST OF THE TIME WHEN WE'RE DONE
WE REPACKAGE THE EVIDENCE AND
WILL RETURN IT TO THE OFFICE
THAT IT CAME FROM.
WE DON'T STORE THE EVIDENCE AT
OUR PRIMARY LAB.
BUT THEN WE HAVE INSTANCES WHERE
WE HAVE CELL PHONES THAT WE
CAN'T BREAK INTO, AND SOMETIMES
THAT MEANS WE HAVE TO TAKE THEM
APART.
SO THEY WILL GET THEIR CELL
PHONE BACK IN A BAGGY IN PIECES.
>> OH.
WELL, SO I'M ASSUMING YOU CAN'T
GIVE BACK A FINGERPRINT.
>> CORRECT.
CORRECT.
>> OKAY.
>> BUT THE DRUG EVIDENCE THAT'S
BEEN COLLECTED, WHAT HAPPENS TO
THAT AT THE END?
>> THAT'S ANOTHER ONE WHERE THEY
DON'T GET IT BACK.
DEPENDING ON IF IT'S A DEA CASE,
WE STORE IT.
IF IT'S NON-DEA WE GIVE IT BACK
TO THE AGENCY FOR STORAGE, AND
GENERALLY IT STAYS IN STORAGE
FOR A LONG TIME.
IF IT'S NEEDED FOR COURT,
THEY'LL PULL IT FROM STORAGE,
AND EVENTUALLY WHEN THE CASE IS
CLOSED AFTER SO MANY YEARS, IT
IS DESTROYED.
>> OKAY.
SPEAKING OF COURT AND COURT
CASES, LIKE YOU GET CALLED TO
COURT QUITE FREQUENTLY, DON'T
YOU?
>> RIGHT.
I WOULD SAY AS A CHEMIST I
PROBABLY RECEIVE A SUBPOENA FOR
COURT AT LEAST EVERY OTHER WEEK.

BUT THAT DOESN'T NECESSARILY
MEAN I GO TO COURT.
BUT I WOULD SAY THE MOST
STRESSFUL PART OF COURT IS
MAKING THE TRAVEL ARRANGEMENTS.
WHEN YOU HAVE A LOT OF SUBPOENAS
AND HAVE TO GO TO A LOT OF
DIFFERENT STATES, JUST GETTING
ALL THE TRAVEL DOWN.
WE ACTUALLY USUALLY HAVE A LOT
OF CHEMISTS GOING TO THE SAME
TRIAL.
IN THIS AREA THERE'S A FEW
DIFFERENT AIRPORTS.
WE'RE ALWAYS TRYING TO FIGURE
OUT ARE WE SHARING A CAR, WHAT
TIME ARE WE FLYING IN, WHAT
HOTEL ARE WE ALL STAYING IN,
THAT KIND OF STUFF.
JUST PARKING, ALL THAT STUFF,
THAT'S THE MOST STRESSFUL PART.
ONE TIME I WAS DRIVING FOR COURT
IN D.C., AND I COULDN'T FIND A
PARKING SPOT.
I FOUND A LITTLE ONE, AND I
COULDN'T FIT IN IT.
I WAS GETTING STRESSED OUT.
ONCE WE GET TO COURT, WE HAVE SO
MUCH TRAINING AND PRACTICE OF
THE ACTUAL TESTIMONY, FOR ME
IT'S NOT AS BAD.
>> AND YOU PROBABLY HAVE HAD
SOME SIMILAR EXPERIENCES IN
GOING TO COURT REPEATEDLY.
I KNOW THAT JILL HAS A WAY OF
DESCRIBING WHAT SHE DOES WHEN
SHE COMES TO COURT, SO IT'S VERY
CLEAR.
>> WELL, A LOT OF TIMES --
SOMETIMES THE REPORTS THAT WE
USE ARE USED FOR INTEL SO THEY
NEVER MAKE IT TO THE PROSECUTION
STATE.
AND THEN SOMETIMES THE
INFORMATION THAT WE USE IS USED
TO PLEA BARGAIN, THE PLEA
BARGAIN AGREEMENTS WITH THE
SUSPECT, SO WE -- I GO TO COURT
ABOUT ONCE OR TWICE A YEAR.
SO IT REALLY DEPENDS ON HOW FAR
ALONG WE GET IN THE PROSECUTION
STAGE OF IT.
>> OF THE CASE.
>> UH-HUH.

>> SO ANNA, WHEN YOU HAVE GONE TO COURT, DO YOU FIND YOU HAVE TO TALK TO A JURY SOMETIMES? AND IS THERE A PARTICULAR WAY THAT LIKE YOU'VE LEARNED OVER TIME TO DESCRIBE WHAT YOU DO IN A WAY THAT A REGULAR PERSON WHO'S NOT A SPECIALIST CAN UNDERSTAND IT?

>> YES.

INTERESTINGLY ENOUGH, THE PROSECUTOR WANTS YOU TO EXPLAIN THINGS BECAUSE OF THE "CSI" EFFECT.

PEOPLE HAVE WATCHED TV, AND WE'RE IN THERE TO SORT OF DISPEL THAT YOU CAN'T FIND FINGERPRINTS ON EVERYTHING AT ALL TIMES.

WE'RE USUALLY IN THERE -- NORMALLY WE DO TESTIFY I WOULD HAVE TO SAY 50% OF THE TIME, AND I ONLY GO TWICE A YEAR.

SO, OKAY, 50% OF THE TIME IS USUALLY NO LATENT PRINTS DEVELOPED.

WE'RE IN THERE EXPLAINING HOW FINGERPRINTS WERE NOT FOUND ON THE ACTUAL DRUG EVIDENCE ITSELF. THAT IS BECAUSE PEOPLE FIND FINGERPRINTS NO MATTER WHAT, AND WE'RE IN THERE AND TRYING TO EXPLAIN WHY WE DID NOT FIND FINGERPRINTS ON THE DRUG EVIDENCE.

SO THE JURY LEARNED SOMETHING.

>> THE JURY DOES -- THE JURY DOES LEARN SOMETHING, I BELIEVE, THROUGH -- THROUGH EXPLAINING THE PROCESS AND EXPLAINING THAT THE DRUGS ARE CONTAMINANTS, AND THAT IT DOES CAUSE PROBLEMS WHEN LEAVING FINGERPRINTS BEHIND ALSO.

>> ONE OF THE THINGS I FIND INTERESTING ABOUT WHAT YOU SAID WAS THAT THIS WHOLE "CSI" EFFECT IS -- IS ONLY DATES TO THE BEGINNING OF THAT TELEVISION SHOW WHICH, OKAY, HAS BEEN AROUND A REALLY LONG TIME NOW.

>> YES.

>> BUT IT'S ONE OF THOSE FACTORS THAT YOU HAVE TO BE AWARE OF IN A JOB THAT I THINK HAS BEEN LIKE

CHANGING SOME OVER TIME,
PARTICULARLY WITH TECHNOLOGY OR
SKILLS AND EXPERIENCE.
AND I'M WONDERING HOW YOUR JOB,
HOW YOU HAVE FOUND YOUR JOB HAS
CHANGED SINCE YOU STARTED OR IF
IT'S BECOME EASIER OR HARDER.
>> THE JOB I THINK HAS BECOME
MORE TRANSPARENT.
SO THERE'S A LOT MORE
DOCUMENTATION BECAUSE OF THE
TRANSPARENCY THROUGH THE COURT
SYSTEM, THROUGH REPORTS THAT
HAVE BEEN CONDUCTED OUTSIDE OF
OUR AGENCY ITSELF.
JUST FORENSIC SCIENCE IN GENERAL
HAS BECOME TRANSPARENT.
PEOPLE WANT TO KNOW EXACTLY WHAT
YOU DID AND HOW YOU DID IT, THE
THOUGHT PROCESS BEHIND IT.
SO THE DOCUMENTATION HAS
INCREASED WHICH THEN DOES SLOW
YOU DOWN, BUT JUST LIKE ANYTHING
ELSE, THOSE CHANGES JUST BECOME
A NORM FOR AN EVERYDAY, YOU
KNOW, CASE WORK.
SO YES, IT'S BECOME MORE
DOCUMENTATION IN WHICH YOU THINK
TAKES MORE TIME, BUT IN THE END,
YOU DO ADJUST TO THOSE CHANGES,
AND IT DOES -- YOU FEEL THAT
THERE IS ACTUALLY VALUE IN WHAT
YOU ARE PROVIDING AS PART OF THE
TRANSPARENCY OF FORENSIC
SCIENCE.
>> SO INTERESTING.
I THINK TECHNOLOGY MUST PLAY A
ROLE, TOO, BECAUSE TECHNOLOGY IS
CONSTANTLY CHANGING.
AND I KNOW THAT JILL USES
TECHNOLOGY IN HER JOB TO ANALYZE
THE TECHNOLOGY THAT IS HER JOB.
>> YES.
I THINK IT'S VERY -- IT'S
ONGOING AND CONSTANT.
AND PART OF WHAT IS SO EXCITING
ABOUT MY JOB IS THAT EVERYTHING
IS CONSTANTLY CHANGING.
WHEN I STARTED WORKING IN
FORENSICS, WE USED TO BOOT A
COMPUTER WITH A FLOPPY DISC, AND
EVERYONE HAD FLIP PHONES.
HERE WE ARE SEVERAL YEARS LATER,
AND EVERYONE HAS SMARTPHONES,

AND WE HAVE COMPUTERS WITH NO
HARD DRIVES.

SO YOU HAVE TO CONSTANTLY CATCH
UP AND BECOME AWARE OF WHAT'S
CHANGING AND HOW DO YOU ADDRESS
THE CHANGES AND STILL PRODUCE
INFORMATION THAT AN AGENT CAN
USE IN A VIABLE FORM.

>> YOU KNOW, TECHNOLOGY, LIKE
YOU USE TECHNOLOGY ALL DAY LONG.
SO IS IT HELPING YOU, IS IT
STILL CHANGING?

>> RIGHT.

I HAVE TO AGREE THAT TECHNOLOGY
DEFINITELY HELPS.

GOING FROM PAPER, LAB REPORTS,
TO DIGITAL LAB REPORTS, TAKING
OUR NOTES ON SOFTWARE INSTEAD OF
WRITING IT DOWN, ALSO ABOUT THE
TYPES OF INSTRUMENTATION WE USE,
GET REFRESHED EVERY SO MANY
YEARS.

AND THE INSTRUMENTATION BECOMES
MORE SENSITIVE, MORE RUGGED,
LOWER LIMITS OF DETECTION, SO
THAT ALWAYS HELPS WITH ANALYSIS.
BUT I WILL SAY TECHNOLOGY ON THE
OPPOSITE END FOR PEOPLE THAT ARE
CREATING NEW TYPES OF SYNTHETIC
DRUGS ALSO IMPROVES BECAUSE
WE'LL CONTINUOUSLY SEE NEW TYPES
OF DRUGS.

>> SO IT'S ALMOST A SPIRALING
EFFECT OF YOU DO THIS AND THEY
DO THAT, AND NOW WE HAVE TO DO
THIS, AND THEY DO THAT.
SO IT'S BECOMING MORE COMPLEX AS
YOU BECOME BETTER, MORE
PROFICIENT AT WHAT YOU'RE DOING.
WELL, WITH WHAT YOU'RE DOING,
YOU'RE IN A FIELD BECAUSE OF THE
CSI EFFECT, I THINK, THAT IS
HUGELY INTERESTING TO A LOT OF
PEOPLE AS A FUTURE CAREER PATH.
IN PREPARING FOR THIS PARTICULAR
PANEL TODAY, MY E-MAIL ADDRESS
IS THE ONE THAT'S ON THE
PUBLICITY, AND I WAS GETTING
EMAILS FROM PEOPLE WHO WERE
SAYING, SO, IF I WANTED TO JOIN
THIS CAREER FIELD, WHAT WOULD I
NEED TO DO IN ORDER TO BE ABLE
TO DO THAT.

SO I KNOW THAT WE HAVE FOLKS WHO

ARE PART OF OUR STREAMING
AUDIENCE WHO ARE VERY INTERESTED
IN FIRST WHAT YOU DO AND HOW YOU
BECAME QUALIFIED TO DO IT, BUT
THEN HOW THAT WOULD TRANSLATE
INTO THEN SECURING A JOB WITH DE
A -- DEA.

THAT'S MY PREPARATORY QUESTION
FOR THE NEXT ONE WHICH IS, IF
YOU'RE GIVING ADVICE, JONATHAN,
TO SOMEBODY, LIKE WHAT KIND OF
PEOPLE OUR QUALITIES DO YOU
THINK PEOPLE SHOULD HAVE TO BE
SUCCESSFUL AS A FORENSIC
CHEMIST?

>> SO I'D SAY THE FIRST THING
YOU'D WANT TO DECIDE IS
UNDERSTANDING THE DIFFERENCE
BETWEEN A CHEMIST AND A FORENSIC
CHEMIST.

AND IF YOU WANT TO GO THE ROUTE
OF BEING A FORENSIC CHEMIST.
THAT'S THE SAME THING IF YOU
WANT TO BE A TOXICOLOGIST VERSUS
A FORENSIC TOXICOLOGIST.

REALLY THE MAJOR DIFFERENCE IS
THAT YOU HAVE TO BE ABLE TO
COMMUNICATE YOUR RESULTS MORE,
WHETHER THAT BE IN COURT OR WITH
AGENTS AND STUFF LIKE THAT.

IT'S DEFINITELY -- DEFINITELY A
LABORATORY-TYPE JOB WHERE YOU
WORK INDEPENDENTLY.

THERE'S A LOT OF SCIENCE.
BUT THERE'S AN ASPECTS OF
FORENSICS WHERE YOU HAVE TO BE
ABLE TO BE AN EFFECTIVE
COMMUNICATOR.

>> ALL RIGHT.

NOW YOU HAVE A MASTER'S DEGREE.
DO YOU -- WOULD YOU SAY THAT
THEY NEED A MASTER'S DEGREE TO
COME TO DEA?

>> WELL, I WOULD SAY TO LOOK AT
THE USA JOBS POSTING AND LOOK AT
THE QUALIFICATIONS NEEDED FOR
FORENSIC CHEMISTS.

THEY HIRE A RANGE OF GRADES, AND
THEY DON'T NECESSARILY ALL HAVE
THE SAME REQUIREMENTS.

I WOULD SAY IT'S NOT NECESSARY.
BUT YOU'D HAVE TO LOOK AT THE
SPECIFIC POSTING.

>> OKAY.

AND I -- I NOTICED YOU SAID
EARLIER THAT WHEN YOU WERE IN
COLLEGE, YOU HAD A JOB, A
COLLEGE JOB THAT WAS IN A POLICE
DEPARTMENT.

SO HOW IMPORTANT IS IT IN
PUTTING TOGETHER THOSE KINDS OF
SKILLS BEFORE YOU EVEN GET TO
THE END OF YOUR DEGREE OR TO THE
END OF YOUR MASTER'S DEGREE?

>> YEAH.

I'D SAY SOME SORT OF PART-TIME
JOB OR SOME SORT OF LABORATORY
WORK, JUST EXPERIENCE BEING IN A
LABORATORY, AND THAT'S ALSO
GREAT FOR YOURSELF TO KNOW
THAT'S WHAT YOU WANT TO DO FOR
THE REST OF YOUR LIFE, BEING IN
A LABORATORY.

I ALSO DID A POST GRAD
INTERNSHIP IN A TOXICOLOGY LAB.
THAT WAS IMPORTANT TO ME BECAUSE
I LEARNED I NEVER WANT TO DEAL
WITH BODY -- TO DEAL WITH BODY
FLUIDS EVER AGAIN.

IT'S GREAT TO GET DIFFERENT
EXPERIENCES AND DIFFERENT AREAS
OF FORENSIC SCIENCE TO LEARN
WHAT'S GOOD FOR YOU.

>> ANNA, WHAT KINDS OF SKILLS OR
ABILITIES OR PERSONALITY TRAITS
SHOULD SOMEBODY HAVE TO BE
SUCCESSFUL AS A FINGERPRINT --

>> FINGERPRINTS, YOU CAN'T GO TO
SCHOOL TO BECOME A FINGERPRINT
SPECIALIST, RIGHT.

IF I HAD TO GIVE ADVICE, WHAT I
DID, FORENSIC SCIENCE, ABOUT
PIGEON HOLE ME TO FORENSIC
SCIENCE.

IT'S CHEMISTRY THAT EVERYBODY
UNDERSTANDS YOU GO TO A JOB
INTERVIEW AND SAY I HAVE A
FORENSIC SCIENCE DEGREE.

IN MY DAY, WHAT DID THAT MEAN TO
ANYBODY?

BUT PEOPLE UNDERSTAND IT NOW.
HOWEVER, HOW MANY JOBS ARE
FORENSIC SCIENCE JOBS, HOW MANY
ARE OUT THERE?

IF YOU HAVE A CHEMISTRY DEGREE
OR A DIFFERENT DEGREE THAT
EVERYBODY CAN UNDERSTANDS, IF
YOU HAVE TROUBLE GETTING TROUBLE

AS A FORENSIC SCIENTIST YOU CAN
USE THE CHEMISTRY TO GET A
CHEMISTRY JOB.
AND YOU KIND OF DIVERSIFY
YOURSELF.
JOHN MENTIONED THERE'S A
FORENSIC PART OF THE JOB AND THE
NONFORENSIC PART.
SO BUT YOU GIVE YOURSELF
OPTIONS.
IF YOU DO NOT FORENSIC SCIENCE
YOURSELF SO MUCH.
THAT'S TO BEGIN WITH.
AS FAR AS BEING A CRIME SCENE
INVESTIGATOR OR A LATENT PRINT
EXAMINER, YOU HAVE TO BE -- YOU
HAVE TO ADAPT.
THINGS DON'T ALWAYS GO RIGHT.
YOU KNOW, THE WEATHER CAN BE A
PROBLEM IF YOU'RE OUTDOORS.
THE TIME OF DAY CAN BE A
PROBLEM.
YOU HAVE TO WORK A LOT BY
YOURSELF, YOU HAVE TO MAKE
DECISIONS ON YOUR OWN.
AND IT'S A CHALLENGE.
BUT IT -- YOU KNOW, IF YOU LIKE
TO BE YOUR OWN AND WORK -- I'LL
FIND FINGERPRINTS, YOU KNOW,
IT'S A GREAT JOB.
A GREAT JOB AT THE DEA.
>> WONDERFUL.
AND SO WHAT KIND OF QUALITIES
SHOULD SOMEBODY WHO'S THINKING
ABOUT DIGITAL FORENSIC HAVE?
>> SO I CAME IN WITH AN ACADEMIC
BACKGROUND, AND I THINK IT'S
GOOD TO HAVE A TECHNOLOGY
BACKGROUND ACADEMICALLY BECAUSE
YOU'RE GOING TO WORK WITH THINGS
LIKE DATA BASES AND PROGRAMMING,
YOU MIGHT BE WORKING WITH DATA
BASES, AND YOU'RE GOING TO HAVE
TO REBUILD A PHARMACEUTICAL DATA
BASE THAT YOU'VE NEVER SEEN
BEFORE.
OR YOU'RE GOING TO RUN INTO
DIFFERENT APPS ON PHONES THAT
YOU'VE NEVER SEEN BEFORE.
AND YOU'RE GOING TO HAVE TO BE
ABLE TO REBUILD THOSE DATA BASES
IN ORDER TO SHOW AN AGENT THAT
THIS PERSON WAS IN THIS CITY AT
THIS HOTEL AT THIS TIME.

AND THEN IT'S HELPFUL TO HAVE A SCRIPT COULD BACKGROUNDS -- SCRIPTING BACKGROUNDS WHICH YOU CAN GET THROUGH ACADEMIA BECAUSE YOU SORT OUT CERTAIN FILES THAT YOU'RE LOOKING FOR, THAT YOU CAN THEN PASS ON TO THE AGENT.

BUT IF YOU DON'T HAVE AN ACADEMIC BACKGROUND, GETTING AN I.T. BACKGROUND THROUGH OTHER MEANS LIKE THROUGH THE MILITARY, LIKE THROUGH THE POLICE, IS ALSO A GOOD WAY TO BE IN THE BACKGROUND IN THAT WAY.

THERE ARE I.T. FORENSIC CERTIFICATIONS THAT ARE GREAT TO HAVE, TOO, THAT ESTABLISH THAT YOU HAVE THE CREDENTIALS THAT WHEN YOU APPLY FOR A JOB WITH DEA OR ANY FEDERAL AGENCY, THAT YOU KNOW WHAT YOU'RE TALKING ABOUT.

AND I THINK IT ALSO HELPS TO BE A LITTLE GEEKY FOR FORENSICS BECAUSE YOU'RE GOING TO BE HAVING TIMES WHERE YOU'RE GOING TO HAVE TO TAKE APART AN iPhone AND REPLACE THE BATTERY, OR YOU'RE GOING TO HAVE TO TAKE APART A COMPUTER AND FIGURE OUT WHERE IS THE HARD DRIVE AND HOW DO YOU GET THIS LAPTOP HARD DRIVE OUT FROM THIS LAPTOP.

SO IT HELPS IF YOU'RE GEEKY AND LIKE TO PUT PUZZLES TOGETHER AND TAKE THEM APART BECAUSE YOU'RE GOING TO BE DOING THAT WITH ALL KINDS OF COMPUTERS AND LAPTOPS AND EVERYTHING YOU CAN -- LAPTOPS AND EVERYTHING YOU CAN THINK OF.

>> EXCITING.
A LOT OF FUN.

SO I'M GOING TO SAY THANK YOU TO EVERYONE.

AND I WANT TO OPEN THE FLOOR AT THIS POINT TO QUESTIONS.

FOR OUR STREAMING AUDIENCE, IF YOU HAVE A QUESTION, IF YOU COULD PLEASE E-MAIL IT TO THE ADDRESS ON THE HOME PAGE AT DEAMUSEUM.ORG.

WE HAVE A QUESTION READER IN THE AUDIENCE WHO'S READY TO TAKE

THOSE AND FEED THEM TO OUR
PANELISTS.

FOR THOSE OF YOU WHO ARE HERE
WITH US IN THE AUDITORIUM, WE
HAVE A PERSON ON EACH SIDE WHO
HAS A MICROPHONE.

SO IF YOU COULD RAISE YOUR HAND,
THEY WILL COME TO YOU.

I'M GOING TO ASK YOU TO PLEASE
USE THE MICROPHONE BECAUSE EVEN
THOUGH WE CAN PROBABLY HEAR YOU,
WE WANT TO MAKE SURE THAT OUR
STREAMING AUDIENCE CAN HEAR YOU,
AS WELL.

SO ANY QUESTIONS IN THE
AUDIENCE?

>> AS A HUMANIST, BOOK --
LOOKING AT SCIENCE IS ALWAYS
LIKE AHH TO ME.

BUT YOU ALL MAKE IT SOUNDS
REALLY FUN.

I GUESS MAYBE IT WAS MY TEACHERS
IN SCHOOL THAT MADE IT NOT FUN.
BUT MY QUESTION FOR YOU ALL IS
MATH.

WHAT KIND OF MATH -- DO YOU HAVE
TO TAKE MATH, AND LIKE I'M
THINKING IN THE -- IS IT MORE
MATH THAT YOU NEED TO DO, OR I
MEAN BECAUSE CHEMISTRY IS MATH,
RIGHT?

AND FORENSICS ARE ONES AND
ZEROS.

SO TELL ME WHAT KIND OF MATH YOU
HAD TO TAKE.

>> I'LL GO FIRST.

FOR MY MATH PERSONALLY, I THINK
I TOOK LIKE CALCULUS ONE AND TWO
AND THEN THE PHYSICS CREDITS
THAT I TOOK WERE THE CAL
CLASS-BASED PHYSICS --
CALCULUS-BASED PHYSICS.

AND THAT CARRIES OVER TO THE
MUCH HIGHER LEVEL OF CHEMISTRY
WHEN YOU GET TO THERMODYNAMIC
AND QUANTUM MECHANICS,
CHEMISTRY, THERE WAS A LOT OF
MATH.

WHEN YOU ACTUALLY SEE THE USA
JOBS POSTING FOR A CHEMIST
POSITION, I THINK IT LISTS A
CERTAIN AMOUNT OF CREDITS OF
MATH AND PHYSICS AND CHEMISTRY,
AND I WOULD JUST SUGGEST LIKE

THAT'S JUST -- THAT'S THE
MINIMUM REQUIREMENT.
SO YOU SHOULD TRY TO STRIVE TO
DO MORE THAN THAT TO GET ENOUGH
KNOWLEDGE.
>> I AVOIDED MATH.
WHEN I LOOKED FOR A MAJOR, I
WANTED A MAJOR THAT DIDN'T
INVOLVE ANY FOREIGN LANGUAGE AND
DIDN'T INVOLVE A WHOLE LOT OF
MATH.
AND BUSINESS WAS THE MAJOR FOR
ME.
THAT SAID, YOU NEED TO HAVE AN
UNDERSTANDING OF MATH BECAUSE
YOU NEED TO UNDERSTAND THE
DIFFERENT SIZES FOR DIFFERENT
HARD DRIVES AND YOU NEED TO BE
ABLE TO UNDERSTAND WHERE FILES
WILL BE LOCATED.
SO SOMETIMES YOU'LL NEED TO BE
ABLE TO CALCULATE WHERE A FILE
WILL BE LOCATED ON A HARD DRIVE,
WHERE A FILE WILL BE LOCATED ON
A CELL PHONE, AND SO AN
UNDERSTANDING OF MATH IS
IMPORTANT FOR THAT.
FORTUNATELY FOR ME, THE COMPUTER
PROGRAMS WE USE HAVE AUTOMATED
THAT PROCESS, SO WE DON'T HAVE
TO DO THE MANUAL CALCULATIONS TO
DETERMINE THE LOCATIONS OF
VARIOUS FILES.
>> WELL, I HAVE TO SAY, I
ENTERED MICHIGAN STATE AS A
BIOCHEMISTRY MAJOR, AND I DIDN'T
DO WELL IN THE CALC-BASED
PHYSICS.
SO YEAH.
I BACKED OUT OF THAT CLASS REAL
FAST AND SAID, HEY, COUNSELOR, I
DON'T KNOW WHEN I'M DOING.
THAT'S REALLY THE WHOLE BACK
STORY TO THAT.
BUT I DID HAVE CALC THREE.
THAT'S WHAT I HAD TO END UP WITH
WITH FORENSIC SCIENCE DEGREE.
IT DID REQUIRE CALC THREE.
THAT'S WHERE I ENDED THE
CALC-BASED ANYTHING.
IT'S THE BASIS, RIGHT, MATH'S
THE BASIS.
BUT IT'S THE CONCEPTS OF THE
CHEMISTRY AND THE SCIENCE ALSO

IS WHAT THE FORENSIC SCIENCE
WOULD HAVE TO BE MORE SO THAN
THE MATH.

>> OKAY.

ANY OTHER QUESTIONS?

THERE WE GO.

>> I HAVE TWO.

THE FIRST, I THINK YOU MADE
MENTION OF IT EARLIER IN THE
CONVERSATION.

TALK A LITTLE BIT MORE ABOUT
WHAT EACH OF YOUR THREE AREAS DO
TO INTERACT WITH NOT JUST DEA
CASES BUT PERHAPS STATE AND
LOCAL LAW ENFORCEMENT CASES OR
OTHER FEDERAL AGENCIES BECAUSE I
GUESS YOU ALL, SOUNDS LIKE YOU
DO ANALYSIS OF EVIDENCE FOR
OTHER PEOPLE'S CASES, AS WELL.
THAT'S THE FIRST QUESTION.

IF YOU COULD START THERE.

>> GO AHEAD.

>> SO I -- WE WORK CASES, WE'RE
CALLED TO HELP WITH SEARCH
WARRANTS, BOTH WITHIN THE UNITED
STATES AND OUTSIDE OF THE UNITED
STATES.

SO WE WORK WITH LAW ENFORCEMENT
IN SEVERAL DIFFERENT COUNTRIES
BECAUSE DEA IS NOT JUST NOT THE
UNITED STATES.

IT'S ALL OVER THE WORLD.

SO I SPECIALIZE IN CELL PHONE
FORENSICS, AND ALSO I DO
TRAINING WITH LOCAL LAW
ENFORCEMENT BUT ALSO DO TRAINING
WITH INTERNATIONAL LAW
ENFORCEMENT.

SO IT'S REALLY GREAT BECAUSE NOT
ONLY DO WE GO THERE AND DO THE
IMAGING WORK, WE'LL IMAGE THE
CELL PHONE FORENSICS, BUT WE
WILL TEACH THE LAW ENFORCEMENT
IN THOSE LOCAL REGIONAL OFFICES
OUTSIDE OF THE COUNTRY HOW THEY
CAN DO IT, EMPOWER THEM TO BE
ABLE TO MOVE FORWARD AND CONDUCT
BETTER EXAMINATIONS AND GET MORE
INFORMATION SO THAT THEY CAN
HAVE BETTER INVESTIGATIONS AND
WORK MORE -- INVESTIGATIONS AND
WORK MORE WITH DEA.

>> JONATHAN?

>> I'LL SAY FOR THE LABORATORY

SIDE, WHERE WE'RE -- WE'RE THE
DRUG LABORATORY FOR ALL THE
FEDERAL AGENCIES, RIGHT.
WE GET DEA CASES, BUT WE'LL ALSO
GET FBI, ATF CASES.
WHEN I'M ANALYZING THE EVIDENCE,
IT -- THE EVIDENCE, IT DOESN'T
LOOK THAT DIFFERENTLY, THE
PACKAGING.
MAYBE THEY'RE TREATED A
DIFFERENT WAY.
AS FOR THE STATE AND LOCAL, WE
GENERALLY DON'T DO TOO MUCH
STATE AND LOCAL CASES IN THE
LABORATORY.
THERE MAY BE SOME EXCEPTIONS
WHERE WE HAVE CERTAIN
CAPABILITIES, WHERE THEY MAY
NOT.
AND THEN ALSO FOR CLANDESTINE
LABORATORIES, THERE ARE TIMES
WHEN OUR LABORATORY WILL ASSIST
A STATE OR LOCAL LABORATORY WITH
THEIR -- A CLAN LAB AND WE
WOULDN'T TAKE THAT EVIDENCE.
THEY WOULD ANALYZE IT, BUT WE
WOULD BE THERE FOR ASSISTANCE.
>> FOR FINGERPRINTS, WE
OBVIOUSLY WORK, IF THE DE -- WE
OBVIOUSLY WORK FOR THE DEA.
THOSE EXHIBITS ARE DONE.
BUT WE DO ATF ALSO, FBI USUALLY
GETS SEPARATED AND SENT BACK TO
THE FBI SO THAT THEIR
FINGERPRINT SPECIALISTS WILL
PROCESS THAT FOR FINGERPRINTS.
THE STATE AND LOCALS AGAIN, LIKE
THE STATE AND THE LOCAL, THEY
USUALLY WORK THEIR TASK FORCE
OFFICERS THAT WORK WITH DEA, SO
WE'RE IN -- THEY'RE IN THE MIX
ANYWAY I GUESS.
BUT WE WOULD NORMALLY GO OUT AND
JUST WORK FOR THE LOCAL PEOPLE
UNLESS OUR AGENTS ARE NEEDING
THE ASSISTANCE OF US WITH THEM
IN ORDER TO MAKE THEIR CASES.
>> THANK YOU SO MUCH FOR ALL THE
INFORMATION THAT YOU MENTIONED.
I HAVE A Ph.D. DEGREE.
I WORK AND HAVE INFORMATION IN
THE -- CONVENTIONAL REALTIME
PCR.
WHEN I WOULD GO TO APPLY FOR THE

U.S. JOBS FOR THE DEA OR ANY OTHER AGENTS, THERE ARE SOME QUESTIONS THAT I CANNOT PASS. FOR INSTANCE, THAT IT SAYS YES OR NO, FOR INSTANCE, THE SELECTED SERVICE, HAVE YOU BEEN REGISTERED FOR SELECTED SERVICE? WELL, WHEN I CAME TO THE UNITED STATES, I CAME AFTER MY -- AFTER AGE 26.

SO NO.

SO NO WHICH MEANS THAT I WILL NEVER PASS THIS -- I CANNOT GET THE JOB.

HOW CAN YOU HELP ME TO GO TO THE FORENSIC SCIENCE?

THANK YOU.

>> SO I WOULD THINK THAT THAT'S A TECHNICAL QUESTION REGARDING THE PROCESS OF THE USA JOBS APPLICATION THAT WOULD PROBABLY BEST BE DIRECTED TOWARD SOMEONE IN THE HUMAN RESOURCES OR RECRUITING SECTIONS AT DEA. WE CAN PROBABLY TOUCH BASE AFTERWARDS SINCE YOU'RE HERE IN PERSON TO SEE WHAT WE CAN DO TO FIND THE RIGHT PEOPLE FOR THAT. BEING A FEDERAL EMPLOY MYSELF AND ALL OF YOU ARE, TOO, WE HAVE ALL BEEN THROUGH THE GAUNTLET OF THE USA JOBS, HAVE WE NOT? AND I THINK THERE'S GENERAL PIECES OF ADVICE THAT WE CAN PASS ON ABOUT THE MORE JOB-SPECIFIC PARTS OF THE SITUATION.

>> USA JOBS.GOV IS SOMETHING WE HAVE TO LEARN TO CONQUER. I WOULD SAY IN GENERAL THAT -- ACTUALLY THE JOB POSTINGS AREN'T ACTUALLY POSTED FOR VERY LONG. SOMETIMES THEY'RE LIKE A TWO-WEEK JOB POSTING. SO WHAT I TRY TO TELL PEOPLE IS TO HAVE YOUR USA JOB ACCOUNTS READY.

I THINK YOU CAN ACTUALLY SET UP ALERTS ON IT WHEN CERTAIN POSTS COME UP WITH KEY WORDS. AND ONCE IT COMES UP, MY MAIN ADVICE WOULD BE TO READ THE JOB POSTING CAREFULLY AND LOOK AT ALL THOSE KEY WORDS AND HOW YOUR

EXPERIENCE CAN APPLY TO THOSE.
AT LEAST WITH THE FORENSIC
CHEMIST THEY HIRE A RANGE FOR
THE GRADES.

SO JUST BECAUSE YOU HAVE A NO
FOR ONE ANSWER, THAT MAY NOT BE
LIKE A DISQUALIFYING QUESTION.
THAT COULD JUST BE BASED OFF OF
LIKE WHAT GRADE YOU WOULD BEGIN
AT.

AND MY OTHER TIP WOULD BE I KNOW
A LOT OF PEOPLE KIND OF HAVE
THEIR GENERAL RESUME, AND THEY
SUBMIT IT FOR ANY POSTING ON USA
JOBS.

BUT I'D REALLY EMPHASIZE
TAILORING YOUR RESUME AND YOUR
USA JOBS ACCOUNT TO THAT ONE
SPECIFIC POSITION AND MAKE SURE
THAT YOU AT LEAST ADDRESS
EVERYTHING THAT IT LISTS.

>> ANYTHING TO ADD TO HOW YOU
CAN HELP YOURSELF STAND OUT IN
THE APPLICATION PROCESS?

>> KNOWING WHAT KEY BUZZWORDS,
AGAIN, KNOWING WHAT KEY
BUZZWORDS, IF YOU HAVE THE
EDUCATIONAL BACKGROUNDS, THAT'S
GREAT.

IF YOU DON'T, IF YOU HAVE
CERTIFICATIONS, THAT'S ALSO
GREAT.

>> YES.

AND UPLOADING INFORMATION, TOO,
I KNOW IF YOU HAVE A
CERTIFICATION, THERE'S --
CERTIFICATION, THERE'S A
DOCUMENT AND IT HAS TO GET
UPLOADED.

AND I BELIEVE IF YOU THINK YOU
DID IT AND YOU DIDN'T, IT WILL
KICK YOU OUT, I BELIEVE.

>> RIGHT.

SO ANSWER EVERY QUESTION AS
COMPLETELY AS POSSIBLE.
ATTACH EVERYTHING THAT CAN YOU
ATTACHED.

PUSH "SUBMIT" AND CROSS YOUR
FINGERS.

>> YES.

>> YEAH.

>> ALL RIGHT.

ALL RIGHT.

>> SORT OF FOLLOWING UP ON THE

DISCUSSION OF COURT.

DOES ANY OF THE PANEL HAVE SORT OF A FAVORITE COURTROOM STORY THEY'D LIKE TO RELATE?

>> SO MY FIRST COURT APPEARANCE WAS FOR A CHILD PORNOGRAPHY CASE.

I KNOW WHEN I SIT UP HERE IT DOES SOUND LIKE A REALLY INTERESTING JOB, BUT WE ALSO COME ACROSS ROUGH CONTENT, ESPECIALLY WORKING WITH CELL PHONES.

YOU SEE VIOLENT ACTS OF TERRORISM, YOU SEE VIOLENT SEXUAL ACTS, THERE IS JUST THE WHOLE GAMUT.

AND MY FIRST CASE THAT I DID WAS A CHILD PORNOGRAPHY CASE WHICH FOR A FORENSIC EXAMINER FOR DIGITAL IS THEIR LEAST FAVORITE THING TO DO.

SO IT WAS MY FIRST COURT APPEARANCE.

I WAS VERY NERVOUS ABOUT THIS. SO I GET TO THE COURTHOUSE, AND I'M SITTING OUTSIDE THE COURTHOUSE WAITING, AND LITERALLY FROM ME TO THE -- TO HIM IS THE DEFENDANT'S MOTHER. AND SO WE'RE SITTING OUTSIDE, AND I'M LIKE, OH, OH, SORRY ABOUT YOUR SON.

AND IT WAS VERY AWKWARD WHEN IT'S YOUR FIRST COURT APPEARANCE.

BUT YOU GO AND -- AND THAT'S THE SUBJECT MATTER THAT YOU HAVE TO DEAL WITH, AND YOU JUST HAVE TO BE IN THE ZONE AND BE PREPARED, AND WE DO A LOT OF MOCK TRIALS WITH DEA IN PREPARATION SO THAT YOU KNOW THAT YOU TRY TO MAKE EYE CONTACT WITH THE JURY, AND YOU PRACTICE WHAT YOU'RE GOING TO SAY AHEAD OF TIME SO THAT IT'S UNDERSTANDABLE TO A LAY PERSON.

>> WE HAVE TIME FOR ONE MORE QUESTION IF THERE ARE ANY MORE QUESTIONS.

>> YOU MENTIONED -- YOU MENTIONED INTERFACING WITH SPECIAL AGENTS.

CAN YOU TALK ABOUT WHETHER ANY
OF YOUR THREE SPECIALTIES
INTERFACE WITH DIVERSION
INVESTIGATORS OR INTELLIGENCE
ANALYSTS IN OTHER PARTS OF AN
INVESTIGATION THAT YOU SUPPORT?

>> FOR FINGERPRINTS, YES, THEY
DO.

SO WE DO.

ESPECIALLY DIVERSION BECAUSE
DIVERSION HAD A COUPLE OF YEARS
OF PRESCRIPTIONS, FALSE
PRESCRIPTIONS,
PSEUDO-PRESCRIPTIONS.

SO THEY WOULD SUBMIT ALL THE
PRESCRIPTIONS THAT WOULD BE
COLLECTED DURING THEIR
INVESTIGATION.

SO WE HAVE WORKED WITH DIVERSION
CLOSELY, THAT HAS GONE AWAY A
LITTLE BIT.

AGAIN, IT SHIFTED SO I'M NOT
SURE WHERE THEY WERE -- IT ALL
GOES.

BUT THE DIVERSION AND NOT THE
INTEL SO MUCH, JUST I GUESS THAT
WOULD BE MORE OF A CHEMISTRY
ITEM.

BUT FOR THE DIVERSION, YES, FOR
THE PRESCRIPTIONS.

>> I'D SAY MOST OF THE TIME THE
PEOPLE THAT I INTERACT WITH
OUTSIDE THE LABORATORY ARE THE
AGENTS AND THE PROSECUTORS.
BUT HAVING INTERACTED WITH
DIVERSION, I'VE INTERACTED WITH
INTEL ONE TIME.

THEY CALLED ME, AND THEY SAID,
HEY, WE SAW THIS REPORT YOU
IDENTIFIED THIS DRUG AS A
LIQUID.

IS THAT RIGHT?

I SAID, YES, AND THEY SAID, OH,
WE'VE NEVER SEEN THAT BEFORE.
JUST MAKING SURE.

NOT A TYPO.

THAT WAS THE ONLY TIME I'VE
GOTTEN TO INTERACT WITH INTEL.
I'M SURE THEY GET INFORMATION
FROM WHAT WE DO.

BUT FOR ACTUALLY INTERACTING
WITH THEM, PERSON TO PERSON, I
DON'T KNOW MUCH.

>> OUR LAB WORKS WITH BOTH

DIVERSION AND ENFORCEMENT.
SO WE WORK CASES BOTH FROM
DOCTOR'S OFFICES AND CLINICS TO
CASES THAT ARE MORE STREET-LEVEL
DRUGS LIKE YOU THINK OF
MARIJUANA AND SPICE AND
CRACK-COCAINE AND OPIOIDS.

SO WE WORK WITH THE DIVERSION
AGENTS AND ENFORCEMENT AGENTS.
WE WORK HAND IN HAND WITH THEM.
WE'LL GET AN UNDERSTANDING OF
WHAT THEY WANT, WHAT ARE YOU
LOOKING FOR OFF THIS PHONE, ARE
YOU LOOKING FOR PICTURES, ARE
YOU LOOKING FOR DATA BASES, ARE
YOU LOOKING TO TRACK WHERE YOUR
OVERDOSE VICTIM WAS THE DAY
BEFORE.

AND THEN WE'LL WORK TO JEB RATE
A REPORT TO SHOW -- GENERATE A
REPORT TO SHOW WHERE THE VICTIM
WAS THE DAY BEFORE, WHO WAS HE
CALLING, WHO IS HE INTERACTING
WITH.

SO WE WORK WITH INTEL ANALYSTS,
AND WE WORK WITH ANOTHER AGENCY
FOR LANGUAGE TRANSLATION
PURPOSES.

SO WE WORK WITH A VARIETY OF
DIFFERENT GROUPS WITHIN DEA.
>> WELL, I WANT TO SAY THANK YOU
VERY MUCH TO OUR FORENSIC
SCIENCE PANELISTS.

EVERYONE APPLAUD FOR THEM.

[APPLAUSE]

I THOUGHT THIS WAS REALLY
WONDERFULLY INFORMATIVE AND KIND
OF FUN FOR ME TO LEARN ALL OF
THESE THINGS.

IT'S FUN EVERY TIME TO LEARN
SOMETHING NEW.

WE REALLY APPRECIATE THAT YOU
CAME TODAY TO SHARE YOUR
EXPERTISE WITH OUR AUDIENCE
HERE, WITH THE AUDIENCE ON LINE,
AND THEN WITH THE VIDEO THAT'S
GOING TO BE ARCHIVED LATER ON.
SO TRUST ME, A LOT MORE PEOPLE
ARE GOING TO SEE THIS DOWN THE
LINE.

THANK YOU TO EVERYONE WHO IS
HERE AND WHO IS WATCHING.
THIS WILL BE AVAILABLE LATER ON,
AND WE HOPE THAT YOU CAN ALL

COME BACK FOR OUR NEXT PROGRAM
IN THE SERIES, "WHO WE ARE AND
WHAT WE DO" HERE AT DEA.
THANK YOU.
[APPLAUSE]