A Message from Dr. Harshbarger

What I’ve Learned During the Pandemic

I have worked at the Montgomery County Coroner’s Office since 2002, serving as the Coroner since 2011. In this time, I’ve experienced the ebb and flow of the office and the employees who work hard to keep it operating 24 hours a day, 7 days a week at exceptional performance levels.

It wasn’t until the pandemic that I was able to more fully admire and appreciate the effort, work and dedication that these employees continuously give to the community. They risked their wellness to maintain the level of service that the loved ones deserve and that contracting customers expect and have grown accustomed to receiving.

I am proud of their effort, attitude and flexibility during this uncertain time. They have adjusted shifts, their working hours, and routines; cost saving efforts were maximized to repurpose PPE; and workflow was adjusted to meet COVID standards.

While it is true that everyone had to adjust and learn to live with a new “normal”, the MCCO/MVRCL employees have embraced the changes and are moving forward with a positive outlook. Change is hard, but we are a more resilient staff because of it.

I am honored and proud to be working among the best.
A Message from the
Director of Operations

BY BROOKE J. EHLERS

The forensic science field has its share of infamous analysts:
Annie Dookhan, Sonja Farak, Joyce Gilchrest, Fred Zain, Joseph Graves....

We expect that our colleagues know right from wrong and can use this compass to mold their moral behaviors. Similarly, ethical assessment is at the core of our mission, to the point that forensic analysts are required to participate in training to assist us in recognizing and handling certain ethical dilemmas and situations. These ethical and moral principles are of the utmost importance to the forensic science community.

Unfortunately, some scientists have fallen dreadfully short in the ethical and moral values needed for the forensic profession. Stealing, selling, or using drugs from casework, not performing the appropriate tests, misrepresenting credentials, lying under oath... the list can go on. These analysts have caused scrutiny for the field of forensic science and have brought undeserved negative attention to the work that we do.

Or have they?

Forensic science is fluid and should be continually evolving. These changes are often improvements, even if they are the result of others’ mistakes. I can attest to the reformations in our lab brought about by the indiscretions of others: accountability, changes in report wording and testimony, more oversight in the laboratory, additional testing. These modifications likely wouldn't be happening if we had not been given a nudge from a publicized scandal or unwanted attention.

When the need for change is heard it is our obligation to respond, investigate, correct and improve. Change is sometimes not easy to accept or admit, but we must move forward- together.

Just as the forensic science community has worked to correct the missteps of our peers, we know that our law enforcement community will do the same. We believe in you, we trust in you, and we know that one action does not represent or ruin the achievements of all.

Stay safe and thank you for your service.

“In any given moment we have two options: to step forward into growth or step back into safety.”

Abraham Maslow
Isotonitazene is a synthetic opioid analgesic that has recently emerged on the illicit market. There are reports in the forensic community that the drug is being seen in Europe, Canada, and the United States. The Miami Valley Regional Crime Laboratory has not identified Isotonitazene in any solid dose seized drug samples to date but has the available reference materials to do so, if or when it begins to appear in case samples.

On May 22, the Board of Pharmacy filed an emergency rule to add Isotonitazene to its list of Schedule I controlled substances. This legislation took effect immediately.

Reports of seizure by law enforcement indicate that the drug may be present in powders, liquid, and counterfeit pharmaceutical tablets. There has been little research available regarding the effects, use, and potency of this drug in comparison to other commonly encountered opioids such as Fentanyl and Carfentanil.

Law enforcement should use the same safety precautions already in place for opioids and always assume that any seized drug contains an opioid until laboratory analysis has been completed.

If you have additional questions, please contact the chemistry section at drugrushes@mcohio.org.
Drug Chemistry: What Happened to the Heroin in My Syringe?

During this time of the opioid crisis, MVRCL has seen an influx in requests for analysis on syringes. There have been many instances where Heroin is not confirmed, however 6-monoacetylmorphine (6-MAM) and/or Morphine, common breakdown products of Heroin, are reported. When moisture is present in Heroin samples, it can start to breakdown into 6-MAM and other metabolites. Between June 2018 and June 2019, a study was performed to determine if the breakdown of Heroin into its metabolites could be slowed.

This study was performed by dissolving purchased Heroin standards in water that were then drawn up into syringes. The syringes were left in two different storage conditions, one stored at room temperature with the other stored in a refrigerator. The contents of the syringes were analyzed once a week for eight weeks, and then once a month until the contents had been stored for an entire year.

On the first day of this study, the Heroin had started to breakdown into 6-MAM, regardless of the storage conditions (Figures 1 and 4). After 8 weeks, the Heroin in the syringe stored at room temperature had completely broken down into 6-MAM, and the 6-MAM had further broken down into Morphine (Figure 2). After 10 months, the 6-MAM was no longer detected in the syringe stored at room temperature and Morphine was the only controlled substance present (Figure 3).

The study demonstrated that the breakdown of Heroin into 6-MAM was slowed considerably when stored in a refrigerator. After 9 months, the Heroin was no longer detected and 6-MAM was the only controlled substance present (Figure 5). At the completion of this study, the 6-MAM had not yet started to breakdown into Morphine like it did when stored at room temperature.

It was concluded in this study that storing syringes in refrigerators after collection can slow down the breakdown of Heroin into 6-MAM and other metabolites. In the state of Ohio, 6-MAM is a Schedule I controlled substance so it is not necessary to store syringes in a refrigerator; but in other states where 6-MAM is not controlled, the practice of storing a syringe in a refrigerator could be beneficial. Analysts at MVRCL are active participants in several professional forensic organizations and this information was presented at the Midwestern Association of Forensic Scientists 2019 Fall Meeting.

By Hillary Crosley
An Update from Firearms

Court Order for Gun Destruction Sought Requiring More Weapons for Testing From Local Agencies

The Firearms section of the Crime Laboratory has requested a Court Order to destroy numerous guns. The weapons have outlived their usefulness according to Patrick McLaughlin, one of our three firearms examiners.

The guns are used to replace parts of weapons submitted to our agency which cannot be tested safely due to their condition. By taking parts from our inventory of weapons and using them to replace worn or dangerous parts from guns, submitted to our agency for operability tests, our personnel can safely restore the gun, test fire it, and put back the original parts as submitted.

Over the years, numerous agencies have donated weapons to our inventory. As we make room, we are asking this practice to continue. If you have weapons in your property room that need to be purged from your inventory and meet the criteria for furnishing them to the Crime Lab, we would love to consider the donation.

The guns we are interested in should be late model, pistols and long guns in good working order. Our staff will work with your department to ensure no duplication of weapons.

If you feel that the transfer requires a Court Order, our personnel will handle the request to the Prosecutor’s Office and Court. If you have any questions as to what might qualify as a needed firearm, please contact Patrick McLaughlin at 496-7298.
In the last newsletter I talked about different examinations that can be done with hair evidence. If a body hair with a root is collected, the root will be sent for DNA analysis. While a head or pubic hair with roots can be used for hair comparisons, sometimes factors can limit or prevent a comparison such as significant time has passed or hair has been cut/dyed/etc. And therefore sending the root for DNA analysis is the only route. When a hair is forcibly removed, cells from the follicle, more commonly referred to as follicular material, can be attached to the root and are where the nuclear DNA may be found.

I recently had a theft case where the agency collected three possible hairs from an item that was left at the scene and submitted them for a Trace DNA Screen. A Trace DNA Screen means they wanted me to look and see if there were roots on the possible hairs and if so then send them on for DNA. It ended up that all three hairs did have roots and were forwarded on for nuclear DNA analysis. Two of the hair roots ended up not producing a profile, but the third root did provide a result of a partial DNA profile matching the suspect. And this was the only evidence submitted to MVRCL!

While hair roots don't always result in a full or partial DNA profile, hairs should still be collected and preserved. You never know, it might end up being your only evidence!
Many labs stopped DNA testing on spent casings because the recovery rate of a DNA profile was essentially zero. Testing samples that they believed would never yield DNA was a waste of time and resources. It was widely accepted the act of firing of a bullet was the causation for the destruction of any potential DNA that could have been on the bullet. Gases and heat during the firing process were thought to be primary culprits.

Once perceived as an impossibility, obtaining DNA profiles from spent casings has become more probable with the progression of DNA technology. As DNA tests become more sensitive, lower amounts of DNA are detectable and what little DNA that could be left behind on a fired casing may be just enough to obtain a DNA profile.

Our DNA section has had several successful cases in which DNA was recovered from spent casings, and the profiles yielded enough information to be compared to standards as well as being searched in CODIS. There have been a few cases that have linked a suspect to the scene of a crime, and these associations were the only DNA evidence that gave any investigative leads. It is worth attempting DNA analysis on spent casings, but do keep in mind that DNA can only be completed if the casings were not handled by someone else, such as a firearms examiner, without gloves. DNA sampling will need to be conducted prior to any firearms related examination.

When swabbing spent casings, we recommend sampling all of the same caliber recovered in the same area in an attempt to recover the most DNA possible. For example, if there are five recovered spent casings in the passenger floorboard of a vehicle, and then six spent casings in the rear driver side seat, swab all the passenger floorboard casings using one to two moistened swabs, and then the driver side seat area spent casings with another one to two moistened swabs. This results in two samples to submit to the DNA section for testing.
Meet our Front Office Staff

The front office of the Coroner’s Office and Crime Lab has seen some changes in the last few months.

Becky Cook has taken on the new role of Administrative Services and will split time between the two sides of the office. Lori Chenoweth will continue to handle the evidence being submitted to the Crime Lab. Elizabeth Walker-Valle, a Forensic Toxicologist Technician, will be assisting when needed. Audrey Heist is also here to help ... whenever her part time schedule allows! Joy Anderson, Jennifer Goodman and Sue Hay can still be found on the Coroner’s Office side.

We would like to thank everyone for your patience with us during this troubled COVID-19 time. Your cooperation during our limited time for accepting evidence was most valuable in helping us get through with staggered employee coverage. We are pleased to be back to normal hours and we are looking forward to continuing to serve you through the upcoming months!
The Montgomery County Coroner’s Office Photography section is operated by Cindy McGillivary and Miles Warren. The primary job of our photographers is to document all evidence during autopsies through photography. Since the Coroner’s Office is a 24/7 facility, you will always see one of them working. Cindy and Miles also handle all other photography related issues throughout MVRCL/MCCO.

As you can imagine, the photography section stays busy. Last year they printed 7,858 prints for MVRCL and 18,647 images for the MCCO.

Miles is putting the finishing touches on a virtual tour he has created of the facility. The virtual tour will be available to members of Grand Jury and requesting member agencies. The video will allow one to see the inner working of the Crime Lab and Coroner’s Office remotely, without disturbing the work environment of the analysts. The virtual tour will also be a tremendous benefit as we observe social distancing guidelines and added building safety during the coronavirus pandemic.

Miles has just completed his first year with the MCCO. He completed his photography education at the Miami Valley Career Technology Center where he excelled in photography and was a student ambassador. Miles was a 2019 Ohio Governor’s Art Contest recipient.

Cindy designs and works on assembling the Newsletters each quarter. Cindy has been with MCCO for 8 years, and has worked in the Photography section for 3 years. She received her Master of Science degree from George Washington University where she focused on forensic science and physical anthropology. Cindy was awarded the 2012 George H. Robinson Memorial Scholarship from the Chesapeake Bay Division of the International Association for Identification and the 2013 Lindsey Marie Ferris Crime Scene Investigation award for her work in forensic photography.
We are Back!!

Unfortunately, COVID-19 eliminated several of our scheduled classes. We have updated our procedures and practices and are happy to resume our training class.

In response to the pandemic, the class size has been adjusted to 8 vs 10. Class size will be evaluated for each class, with an end goal of returning to 10 students. With a class size of 8, each student will have their own table which allows for an appropriate amount of spatial distancing. Each student is issued a mask for discretionary use during lectures and mandatory use during certain practical exercises where distancing is a challenge. Hand sanitizer and gloves have also been placed in the classroom, for use as required.

Students may bring their lunches/dinner and use the refrigerators, microwave, sink, and stove in our breakroom. We also have a drink vending machine and a snack vending machine. Coffee is also available at a nominal cost. Outside dining options may be limited during this time.

If a student exhibits signs of COVID-19 or if they have been exposed to the virus, it will be their responsibility to notify the class coordinator and not respond to the course. The student will be re-assigned to a future course.

The April and May Evidence Technician Training Courses were re-scheduled for June and July. Remaining courses for 2020 are listed.

2020 Course Dates

July 27 – Aug. 7
Sept. 14 - Sept. 25
October 19 - October 30
Space is limited.
Hurry & Sign up!!

The Evidence Technician Training Course application is located at: https://www.mcohio.org/2019application2.pdf

For additional information, contact Robert Hunkeler at 937-496-7266 or hunkelerr@mcohio.org
Adapting the Morgue to Handle Covid-19

The onset of Covid-19 has presented many new challenges for the Morgue. We instantly had new issues to address: How do we extend our supply of PPE while our normal deliveries were backordered? How do we keep our staff safe while dealing with decedents of Covid-19? Where do we store a large number of decedents if the curve does not flatten?

As with all challenges, our morgue staff pulled together and adjusted to a new normal overnight. The N-95 mask instantly became our new best friend, and we found ways to extend our limited supply. Since the N-95 masks fit snugly and make a seal around our nose and mouth, mask facial imprints became our new normal. Even facial hair had to go!

Our staff was divided into ‘teams’ in an effort to keep our office functioning should one group become infected. We worked for 3 months without seeing the other half of our morgue team.

All outside visitors, medical students, and investigators were halted from entering our building in an effort to slow the burn rate of our PPE. Our normally bustling morgue was suddenly replaced with only our small ‘teams’.

As a precautionary measure, we put one of our two “mass casualty’ trailers into service after conducting necessary electrical upgrades. Deceased persons suspected of testing positive for the coronavirus were housed in the trailer pending test results. This was an effort to prevent contamination and keep our staff healthy while dealing with an unknown virus.

After 3 months of working opposite shifts, our staff was re-united on June 1st. It is clear that after dealing with Covid-19 experience we are truly Team Morgue.
Meet Our Staff

**Name:** Rick May  
**Hometown:** Tipp City, Ohio  
**Section:** Investigations  
**Years with MCCO/MVRCL:** started part-time on cold case homicide squad in 2008, started fulltime in 2012  
**Hobbies:** Fishing and spoiling my granddaughter  
**Favorite Food:** Sheri’s Biscuits and Gravy, Tanks is a close 2nd  
**Mentors:** My brother Tom who was a SEAL in Viet Nam  
**Favorite Part of Working at MCCO/MVRCL:** The romance and prestige of position because I've learned that it is always the investigator's responsibility

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**Name:** Jennifer Yoak  
**Hometown:** Cincinnati, but spent many years in Richmond, VA  
**Section:** Latent Prints  
**Years with MCCO/MVRCL:** 7 years  
**Hobbies:** Running marathons and travelling  
**Favorite Food:** Graeter’s ice cream  
**Mentors:** Robin Young and Sylvia Buffington – the Section Chief and Supervisor during my training in Virginia. They were examples of how to be an excellent Latent Print examiner, as well as an effective manager and positive coworker.  
**Favorite Part of Working at MCCO/MVRCL:** Ability to work closely with submitting agencies and other lab sections to answer questions about the evidence submitted and make sure we’re providing the best service possible. Plus, I get to work with my husband!

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**Name:** Patrick McLaughlin  
**Hometown:** Kettering Ohio  
**Section:** Firearms Section  
**Years with MCCO/MVRCL:** 1.5 years  
**Hobbies:** Kayaking, shooting sports and hanging out with my daughter.  
**Favorite Food:** Chocolate  
**Mentors:** my parents, brother and many past and current supervisors with the Kentucky State Police  
**Favorite Part of Working at MCCO/MVRCL:** Working close to my hometown.
The first week of March 2020 our Office helped support a local food bank by supplying employees to stock the shelves in anticipation of the weekly feeding of the less fortunate.

With God's Grace, a local food bank located at 622 Springfield Street in Dayton, feeds hundreds of people weekly. Our employees worked together with the With God's Grace staff to set up for the distribution. It was a humbling experience to say the least, as we not only stocked shelves but fed the homeless.

Thanks to several of our employees who participated in the program: Heather Antonides, Bob Burns, Jen Yoak, Meredith Goebel, Kialee Bowles, Tracy Zehringer and Haleigh Balser, so we could serve in this worthwhile project.

Additionally, Dr. Harshbarger and his family worked on a Saturday in November to help distribute food serving over 400 people.

We are hopeful to assist in the future after the Pandemic passes, allowing safe distribution with social distancing in mind. Anyone who wants to volunteer in the future can contact Mike Nolan.

Thanks again to all that volunteered for this project…it takes a village!
On May 8, 2020, the Montgomery County Coroner’s Office and Miami Valley Regional Crime Lab was honored to participate in the “Caravan Cruiser of Lights” in coordination with the “Light Ohio Blue” kickoff.

In the past, the memorial services have been held in downtown Dayton to honor those officers who made the ultimate sacrifice in the line of duty. The Montgomery County Law Enforcement Memorial Committee, who organizes the services, decided to form a caravan of patrol cars in response to the ban on large gatherings due to the recent pandemic.

Unfortunately, this year, two new names were added to the list of inductees. Officer Claude McCormick of Oakwood Police Department, EOW August 29, 1933 and Detective Jorge Del Rio, Dayton Police Department, EOW November 7, 2019, joined the other 38 names on the memorial.

The caravan made its first stop in Oakwood where Officer McCormick was honored and eulogized as the bag pipes played in the background. It then proceeded to West Third Street in front of the Dayton Police Department where Detective Del Rio was honored.

The caravan then progressed to Children’s Hospital where the mass of patrol cars and fire apparatus lit up the parking lot for the children who were able to see out their windows and enjoy this awesome sight.

The employees of the Coroner’s Office and Crime Laboratory respect those who are on the front line daily protecting our community. “It is our honor to share this sacred moment with the law enforcement agencies and help carry the torch for those who have made the ultimate sacrifice,” said Coroner Kent Harshbarger.
Q: Are there any plans to have MVRCL reports available through a portal instead of by email?

A: Yes, we are in the process of upgrading our Laboratory Information Management system (LIMS) to allow for portal access. Once the upgrade is complete, we will begin to develop procedures for portal evidence submission and report distribution for beta testing with select agencies. Stay tuned for more information!

Q: Do you give tours?

A: We do not give tours to limit the distraction to the employees and eliminate sources of possible contamination. We do have a Virtual Tour of our facility available upon request.
It was the best of times and it became the worst of times, a phrase taken from A Tale of Two Cities by Charles Dickens. Life, the economy and our health were considered just another day in paradise until a new virus, Covid-19, appeared on our doorsteps, changing our lives dramatically.

In a 24 hour period, restaurants were closed, work schedules changed and masks became the newest fashion statement. Now, we are back to work and trying to get some normalcy into our lives. Over the weeks of quarantine we spent unusually vast amount of time with family members, including children, close relatives, spouses and significant others.

So, I thought, I wonder how this will change our future while interacting with others to who we have become so close. I put out requests for employee thoughts as to how their lives might be changed. Here are a few that were returned.

Personally, I was excited to sit in a restaurant with a server, although masked, taking my order for an adult beverage and meal, not served in a Styrofoam box.

Dr. Casto shared that since his wife had returned to work, who requires employees to wear masks, is leaning toward the slightly homicidal side. Many people for various reasons don't like wearing the masks for extended periods of time. In the evening his wife comes home extremely agitated from her day of having her airways covered. Good luck Doc...flowers might help!

Dr. Goolsby sent the following about her post viral changes: “Had never used hand sanitizer before but now use it during and after all ventures into public spaces, as well as isopropyl alcohol to wipe down surfaces. Also, am taking extra daily vitamins C, D and zinc supplements to boost immunity against viral infection. Wash hands much more often, and don't have any skin ridges left on my fingers! More home cooking - finally getting to those “ancient” frozen meats and casseroles at the bottom of the freezer!”

Aaron Davies said, “Nothing in my life has changed,” smiled and walked away. Steady as the day is long!

For Brooke Ehlers, when working remotely, she only added to her staffing supervision. Pictured are the new recruits who learned to make their own breakfasts and lunches between on-line learning sessions. These were called “life sessions” and it looks like the home staff enjoyed their new work.

I have heard of people installing pools due to vacations and cruises being cancelled. If you are thinking of getting an in-ground pool, get in line! Some companies are booking a year out, so don't wait.

Regardless of your challenges, I hope all of us have bright future post C-19. We are lucky to work in a supportive arena and we can pull together to support one another should the need arise. So, take a deep breath, smile under your mask and know the future will be bright again.