The Montgomery County Coroner’s Office has been awarded a grant to instruct death certifiers and physicians on the proper procedures for completing death certificates including those issued during a natural or man-made disaster. The grant, which was funded through the Centers for Disease Control and Prevention (CDC) and administered by the National Network of Public Health Institutes (NNPHI), requires that the training be provided to at least 150 death certifiers and/or physicians.

Collaboration for the grant includes Mrs. Kristie Hunter-Conley, Local Registrar/Supervisor Vital Statistics, Public Health - Dayton & Montgomery County. That department is responsible for recording and filing Death Certificates.

When COVID-19 became a reality, it changed the plan and required the Coroner’s Office to convert the original, in-person classes, to a virtual, online scenario.

As a result, Dr. Harshbarger adapted a plan to record the presentation. This would allow the viewer to see the presentation via the internet.

“Much of the credit is given to Bob Hunkeler, who wrote the grant request,” stated Dr. Harshbarger. “We were one of three offices awarded the project in the country.”

From the onset in March, many phases were put in place with the NNPHI which included identifying the target group of physicians and death certifiers, online surveys, and a needs assessment along with a plan to train the trainer. After the program is launched, there is also a sustainability plan that must be implemented.

As the filming is being documented and taught by Dr. Harshbarger, plans to disseminate the material throughout the medical field are being developed by Bob Hunkeler. The idea is that a physician or a member of the medical community will receive the training through viewing the video, which will take about 2 hours to complete.

There are three components to the training, consisting of Certifying Deaths Due to Natural Causes; Guidance for Certification of Deaths in the Event of a Natural, Human-Induced or Radiological/Chemical Disaster; and Reporting Demographic Information on Death Certificates.
We are in the final hours of celebrating the MCCO/MVRCL 2nd Annual National Forensic Science Week. It shouldn’t take a calendar to prompt us to recognize the forensic science community, but maybe it gives us an excuse to take a little break and reflect on what we’ve accomplished this year.

COVID aside, as an organization we have been making significant advancements to provide better service to you. We were able to take advantage of the altered landscape of our daily work to accomplish some projects that we’ve been wanting to do.

While some of these tasks may seem minimal or insignificant to your agency, they allow us to be more efficient and productive, forward-facing, and progressive—all improvements that shape our ability to deliver a better product to our customers.

- We’ve added several new employees this year throughout the facility: Haleigh Balser (Chemistry), Elizabeth Walker-Valle (Toxicology), Robert Gibbs (Investigations), Justin Masin (DNA), Jacque Engler (DNA), Dr. Anna Richmond (Pathologist), and Meagan Fredette (Morgue).

- Procedure manuals were updated in each section, as well as, the Quality Manual and our building-wide Administrative Manual. Brian Simons revised our Safety Manual to include active threat instruction, which we received training for early in the year from Montgomery County Sheriff’s Deputy, Josh Tays.

- The Chemistry and Toxicology sections provided a combined effort to obtain accreditation for the quantification of hemp. They have since been assisting agencies throughout the State with suspected marijuana cases.

- The Crime Lab obtained a LIMS (Laboratory Information Management System) upgrade which will provide the opportunity for us to begin implementation of the LIMS Portal System. The Portal System will allow agencies to enter their own case information directly into our system, monitor case progress, and obtain reports through a secure location.

- Additionally, on the technology front, Miles Warren from our Photography section completed a virtual tour of the MCCO/MVRCL. We are using the virtual tour for Grand Juries and in lieu of community interest presentations during the pandemic. The inventory system required by Montgomery County has been converted to an electronic version, which will include tracking for grant expenditures and obsolete equipment.

- In the Morgue, construction has begun to accommodate our new LDOOX machine and CT scanner. The project also includes updated ventilation and lighting. We’ve also upgraded our fingerprint scanners for expedient identification of unknown decedents.

- Bob Hunkeler modernized the Evidence Technician course to fit the needs of our agencies. The response has been overwhelming and as a result we have added additional sessions to meet the demand. We are also in the process of adapting our IT system to improve our abilities for streaming, webinars and video conferencing. With these changes, we anticipate new training opportunities for our agencies. Stay tuned!

As always, I would like to hear from you in ways that we can improve our service. We’re always looking for opportunities to serve our customers in a more effective manner. Have a great remainder of 2020 and let’s hope for an amazing 2021!
In September, the Montgomery County Coroner’s Office will add another tool to its scientific trade. A Computerized Tomography Scanner (CT or CAT) will be installed for use by the morgue staff. The scanner will be housed in a trailer, making it portable should the need arise.

A CT scanner emits a series of narrow beams through the human body as it moves through an arc. This is different from an X-ray machine, which sends just one radiation beam. The CT scan produces a more detailed final picture than an X-ray image.

The CT scanner’s X-ray detector can see hundreds of different levels of density. It can see tissues within a solid organ.

This data is transmitted to a computer, which builds a 3-D cross-sectional picture of the part of the body and displays it on the screen. This enhanced image will allow our pathologists to better determine internal damage or change within the human structure.

Dr. Harshbarger expressed excitement as to how this will assist with Court presentations. “The detail you get with the use of the CT scanner is much better than the single image X-ray, currently being used.”

Dr. Casto further stated that the entire morgue staff will be trained on proper use of the scanner. “The training will take place over several days,” Dr. Casto explained. “The 3D imaging, will be used on select cases. It will allow us to show the injuries along a wound track made as an object passes through the body tissue, which, will be very helpful.”

Dr. Casto went on to explain that the term, “Virtopsy,” a registered trademark to Professor Richard Dirnhofer, the former head of the Institute of Forensic Medicine at the University of Bern, Switzerland, will never replace the autopsy, but, can allow the pathologists to eliminate unseen trauma in some cases, thus saving time with a full autopsy when history alone can confidently identify the cause of death.

The trailer that will house the scanner will be located in the parking lot and is specifically built to contain the unit. Overall size of the trailer is 8.5 feet wide by over 30 feet long.
Webster’s defines counterfeit as “made in exact imitation of something valuable or important with the intent to deceive or defraud.” Counterfeiting exists in many facets of life including money and clothing. For us in drug chemistry, the term “counterfeit” only brings to mind one thing: pharmaceutical tablets. Counterfeit pharmaceutical tablets are nothing new, but 2020 has brought a large increase in the number of cases when compared to previous years.

Currently, the most frequently encountered counterfeit tablets are the benzodiazepines. These drugs are more commonly referred to as Xanax® and Valium®. Often times, the correct active ingredient is not present and it has either been replaced by a different benzodiazepine with no accepted medical use or it does not contain any drug at all. As the process for manufacturing these tablets improves, it becomes more and more difficult to distinguish the original tablet from the fake tablet simply by the appearance. The names of these drugs may also appear very similar to drugs with accepted medical use in schedule IV, but most of these drugs are actually schedule I under the benzodiazepine pharmacophore legislation in the Ohio Administrative Code (OAC). Examples of these drugs include Flualprazolam, Flubromazolam, Clonazolam, Diclazepam, and Etizolam.

Opioid tablets are also being counterfeited in the same fashion as the benzodiazepines. It is common that these tablets contain Fentanyl or other fentanyl analogs. It is highly recommended that law enforcement agencies handle all pharmaceutical tablets as clandestine powders containing fentanyl and package appropriately.

The MVRCL will analyze controlled substance pharmaceuticals. If the analysis of one tablet indicates the tablets may be counterfeit, additional analysis is conducted to meet the appropriate statutory threshold. The laboratory report will include a statement that the result is not consistent with a legitimate pharmaceutical preparation to alert law enforcement that these tablets are counterfeit. There have not been any reports of any laboratory encountering counterfeiting in non-controlled tablets and these tablets will still be reported using only physical identification.

Please contact the chemistry section for any question related to controlled substances and/or their analysis at drugrushes@mcohoio.org.
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.
When evidence comes into the Laboratory for a sexual assault case, the first item that will be tested is the sexual assault kit. The items inside the kit are considered the most intimate samples, collected directly off of the victim’s or suspect’s body. Included in the kit can be vaginal/penile swabs, rectal swabs, oral swabs, dried stains from various areas of the body, a DNA standard, fingernail scrapings, pubic hair combings, underwear, and the SANE kit forms. Not every kit includes all of these items. The forms can provide details such as time frame between the assault and collection, if the victim has showered/bathed, changed clothing, any consensual partners within the last 96hrs, and a brief narrative of the assault. Looking at the forms, and any other information that is provided on the submission sheet, the analyst will determine what items need to be tested for semen and/or which items can be moved forward for DNA analysis.

If a sample in the kit is positive for semen, the serology portion of the analysis is complete. The sample can be retained if suspect/consensual partner standards are needed, or moved on for DNA analysis, such as with a stranger assault. If all pertinent samples tested in the kit are negative for semen, then additional items such as clothing, bedding, condoms, etc. may be asked for in the report. In some cases, when a kit is negative for semen, samples may be moved forward for touch DNA analysis. This can include any dried stains collected, swabbings from the underwear, and/or external vaginal/rectal swabs. If all items have been tested and/or no items can be moved forward for DNA analysis, then the kit can be sent to the Trace Evidence Section.

In the Trace Evidence Section, the pubic hair combings, fingernail scrapings, or underwear will be examined. Additionally, if there are clothing/bedding items that are not moved forward for DNA, these can be looked at as well. The pubic hair combings, underwear, and/or clothing and bedding will be examined for any hairs that could potentially be used for a hair comparison (head or pubic hairs) or forwarded for DNA analysis (body hairs/hairs with roots). The fingernail scrapings are examined for any debris, or if a victim has stated they scratched the assailant, possibly ran for DNA analysis. At this time, the MVRCL does not perform fiber comparisons, but can help get the items sent out for examination at another Laboratory if needed.
The Toxicology section analyzes many types of cases including death investigation, OVI, and Drug Facilitated Sexual Assault (DFSA) cases. The type of case dictates testing and the drugs and substances that the section targets. Toxicology prefers that both blood and urine specimens be submitted for DFSA cases. The relevance of the specimen submitted is dependent on the time of the assault versus the time of the specimen collection. If the time between the assault and time of collection is greater than 24 hours, only urine may be of value. Drugs detected in blood generally indicate a more recent ingestion. As more time passes, drugs will gradually eliminate themselves from the body and no longer be detectable in blood. Drugs may be present longer in the urine, but are only indicative of past exposure. This can be helpful, for example, if Xanax is detected in the urine and the victim states Xanax was not voluntarily ingested.

DFSA cases receive extensive testing at lower levels of detection compared to other cases submitted to Toxicology. On average, ten different tests are performed to cover as many drugs as possible including GHB and Rohypnol, or "roofies". GHB and Rohypnol are thought to be the most commonly used date rape drugs; however, this is a major misconception. In fact, we rarely – if ever – find these drugs in casework. Ethanol, or drinking alcohol, is the most common drug detected in sexual assault cases. This is followed closely by over-the-counter and prescription drugs, such as benzodiazepines. These drugs are more commonly used and abused due to their accessibility.

In addition, any information that can be given to the section may allow the testing to be focused on drug class or substance when limited volume is received. This can save the sample from being analyzed for drugs that the victim is known to be prescribed or taking voluntarily. For example, if a victim experiences memory loss or a blackout, a sedative may have been ingested. If the victim is prescribed an antidepressant and it is detected during a screening test, we may save the sample to confirm other unknowns or sedatives that could have incapacitated the victim rather than run a confirmation test for the antidepressant. A detailed case history – including timelines, victim observations, and any drugs known to be ingested – can be a great tool in the DFSA testing process.
Evidence; it’s dirty. There are all kinds of living organisms on, well, everything. And whatever living organisms are on your items of evidence, they will go along for the ride from the scene to the laboratory and back to where the items go to live permanently. When evidence is processed at the scene, it is important to make sure items for DNA testing are properly packaged in paper bags, paper envelopes, or cardboard boxes at the time of collection and from that point forward. Paper lets the packaging breath, and if the item was not fully dry, the air flow provides an opportunity for the items to dry thoroughly. Dry evidence means the environment inside the paper packaging does not become destructive to any potential DNA on the items.

Conversely, when items are packaged in plastic, there is no air flow. Any moisture that was inside the package creates a nice humid environment and the items never dry. This moisture may be from the wetting of a swab that you used to collect a stain or possible touch DNA, or body fluids on clothing that were not thoroughly dried prior to packaging. Your evidence will transform from the once recognizable shirt recovered from the suspect covered in the victim’s blood to a bundle of mold and destroyed evidence, for example. Mold and mildew destroy any DNA that was present and it is never coming back. So to avoid the unintentional ruin of your evidence, remember to package DNA evidence in paper or cardboard!
Latent Prints

Combining Photographs and Lifts to Recover More Evidence

When the Latent Print Section instructs the Evidence Class, we stress the importance of photographing visible prints prior to processing, and even photographing latent prints developed with powders before lifting. While this may be redundant at times, in several recent cases it has made the difference in the suitability of the evidence. In one case, the photograph of the visible print and the lifted print after processing both needed to be used to determine that the print was of value. This was the only latent print of value in the case, and it was ultimately compared and identified. In a second recent case, the submitted lifts taken from a window only recorded two latent palmprints with sufficient contrast and clarity to be of value. The agency then submitted photographs they took of the window prior to processing with powder, as well as after powder but before lifting. Additional latent fingerprints of value were present in these photos that were suitable for comparison and/or to search AFIS. While some of the ridge detail from those latent fingerprints is present in the lifts, it transferred poorly and incompletely (left images). The photos were significantly better (right images). These images are being used with the permission of the submitting agency to illustrate the benefits photography may have, and are cropped to show only a portion of the ridge detail visible in the photographs.

So, how do you make sure you take comparison quality photographs of latent print evidence?

The three main areas of concern are lighting, focus and a scale. Place the scale next to, but not touching, the latent print(s), and on the same plane as the latent prints. Light the area of interest evenly – sometimes oblique or side lighting with a flashlight will make the latent prints most visible. Fill the viewing frame with the latent print (and scale) and use the manual focus setting to focus on the ridge detail. Keep the camera lens parallel to the surface with the prints. Take multiple photos with different lighting, or slight adjustments to the focus, to ensure you capture the prints clearly. Don’t worry if some of your photos end up not useable – we often take multiple photos of the prints we develop in the lab and then choose the best image to work from.

Submit the photos on a CD or DVD, along with the lifts that are taken. Please provide a description that details how the photos and lifts correspond.

What if you took some great photos, but realized you forgot the scale? Send in the CD/DVD – we will use the images to the extent possible. Sizing is most important for database searches, so not having a scale may prevent entering the latent prints in AFIS. However, if the latent prints are of value, direct comparisons should still be possible in most cases without a scale.
Meet Our New Fellow

Please welcome our new Montgomery County Coroner’s Office Forensic Pathology Fellow, Dr. Anna Castiglione Richmond. Dr. Richmond joined our staff on July 1, 2020 and will complete the fellowship on June 30, 2020. She received her Medical Degree from Wayne State University in 2006. She then completed her Anatomic and Clinical Pathology Residency at the University of Texas Health Science Center in Houston, followed by a fellowship in Cytopathology at MD Anderson Cancer Center. Prior to joining the Montgomery County Coroner’s Office, Dr. Richmond practiced hospital pathology for several years. She recently moved to Kentucky and decided to pursue Forensic Pathology.

Please make Dr. Richmond feel welcome!

Since 1993, the Montgomery County Coroner’s Office has offered an ACGME accredited fellowship training program in Forensic Pathology. The fellowship provides a diversified, comprehensive training program that affords trainees extensive hands-on experience in all aspects of Forensic Pathology. With the large reservoir of resources afforded the training program, the trainee receives excellent instruction in all aspects of forensic pathology and criminalistics.

Highlights of training including:

- An experienced forensic pathology staff.
- Efficient and effective working facility and equipment housed adjacent with a fully accredited crime laboratory.
- Intensive training in criminalistics through a structured two-week course at the Miami Valley Regional Crime Laboratory.
- Professional instruction and consultation in Forensic Toxicology, Forensic Odontology, Forensic Anthropology, and Neuropathology.
- Experienced full-time investigative staff to assist with scene investigations.
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.

2021 Course Dates

Jan. 25 – Feb. 5
March 15–26
April 19–30
August 2–13
Sept. 20 – Oct. 1
Nov. 29 – Dec. 10

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
On Wednesday, September 23, 2020, the Dayton Police Department bestowed honors upon the Morgue Staff and Investigators from the Montgomery County Coroner’s Office. The ceremony was held in the green area outside the facility and was attended by the MCCO/MVRCL staff and invited guests.

Speakers present for the event were County Commissioner Carolyn Rice, Director Brooke Ehlers and Dr. Kent Harshbarger. Dayton Police Chief, Richard Biehl presented a special “Oregon District” pin to each of the honorees after giving an emotional synopsis of the night’s events.

On August 4, 2019, nine people were killed in 32 seconds. The Dayton Police responded and neutralized the shooter. Immediately, our staff responded to the scene and worked to document, record and photograph and collect all available evidence for our portion of the investigation. Our mass casualty response plans were activated, and each section of our office responded to their part of the plan in an outstanding fashion.

The ceremony was part of National Forensic Science Week which was being celebrated by the Montgomery County Coroner’s Office and Miami Valley Regional Crime Lab. A replica of the pin will be converted into a plaque and hung in the building to honor all the employees who played a role in the investigation and response.

Dr. Harshbarger said, “Our morgue staff and investigators worked through this stressful situation as a team and their recognition by the Dayton Police Department was well deserved. We pray that there will never be another event like this in Montgomery County. But, be assured that if another mass casualty situation presents itself, our staff will rise to the event as professionals.”
Meet Our Staff

Name: Cody Miller
Hometown: West Elkton, Ohio
Section: Morgue
Years with MCCO/MVRCL: 2
Hobbies: Studying history, camping, kayaking, and hiking
Favorite Food: Sushi and biscuits & gravy
Mentors: Many bits and pieces from different people
Favorite Part of Working at MCCO/MVRCL: The Great Folks I work with that make the hard days tolerable

Name: Robert Hunkeler
Hometown: Englewood, OH
Section: Administration
Years with MCCO/MVRCL: 12 years
Hobbies: Antique Collecting
Favorite Food: Corned Beef
Mentors: Colonel Scott Deacon, Lieutenant Colonel Kevin Poorman, Dr. (Lieutenant Colonel) Nancy Slicner, Special Agent Rick Buckelew, and my father, Robert L. Hunkeler, II.
Favorite Part of Working at MCCO/MVRCL: Serving People.

Name: Jonathan Seiter
Hometown: Xenia, Ohio
Section: Investigations
Years with MCCO/MVRCL: 2 years
Hobbies: Spending time with family, reading, hunting, and fishing.
Favorite Food: Beef Steak
Mentors: My parents who instilled values and work ethic
Favorite Part of Working at MCCO/MVRCL: Learning something new everyday.
The MVRCL NIBIN Center is open to any agency with trained officers to utilize the service. Please contact the Firearms section for security information. Non-members without trained NIBIN officers can submit their cases to MVRCL for an IBIS evaluation, operability and report for $100.

Did You Identify This Object?

This photo is 2 kilos of Ketamine.

Submitted by Jen Watson
Ben Owen Roberts began as a flat foot with the Dayton Police Department and was promoted to Detective/Investigator. He transformed a van he found in the impound lot to accommodate all the supplies he needed to investigate crime scenes, including his own extension ladder.

This picture was taken late 1960's or early 1970's and provided to us by Ben's daughter, Brenda Roberts-Luke.