

ON THE JOB

CRIMINAL JUSTICE UPDATE

COVER STORY

LOOKING AHEAD

Digital composites enhance effectiveness of BCI's clay models used in unidentified-remains cases

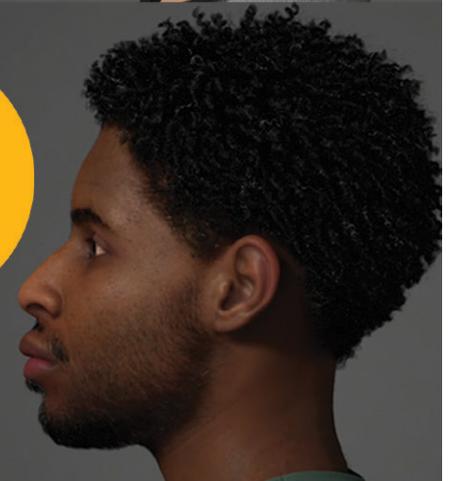
It's the ultimate question for investigators who have exhausted all other means of identifying skeletal remains: What did this person look like?

Thanks to advances in technology and a partnership between the Ohio Bureau of Criminal Investigation and The Ohio State University, that question might be easier to answer in the future.

Until fairly recently, 3D facial reconstruction at BCI was essentially limited to building a clay bust based on a CT scan of the skull and an anthropological analysis to gauge the person's age, sex, ancestry and unique anatomical features.

But a clay bust has inherent limitations because it necessitates a certain amount of guesswork for such details as the color of the eyes, hair and skin; hairstyle; facial hair; shape of the lips; the amount and location of wrinkles; and the amount of fat.

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When it comes to fighting crime, the right team using the right tools lands the hardest punch.

But not every law enforcement agency has the staff to create dedicated teams or the means to buy the newest equipment.

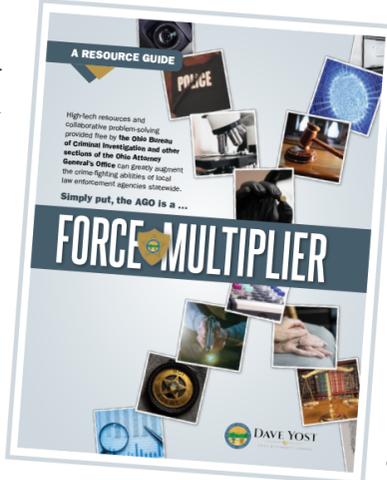
My office and the many units under its umbrella — including the Ohio Bureau of Criminal Investigation — can help neutralize this disparity by providing highly specific expertise and cutting-edge tools that most agencies simply don't have in-house.

The Ohio Attorney General's Office (AGO) works with law enforcement agencies to maximize their potential, no matter their size. In that sense, I refer to the AGO as a force multiplier — because the office provides not only state-of-the-art technology but also the highly trained investigators, analysts and scientists who so often make the difference in major criminal investigations through their collaboration with local agencies.

And all of these resources are free.

The key is making sure that law enforcement agencies are aware of all the resources that my office offers.

It's not unheard of, for example, for a longtime police chief or sheriff to confide that he or she had no idea that BCI has forensic accountants on staff, or that the Ohio Organized Crime Investigations Commission offers forensic audio and video services, or that the AGO has



teams devoted to elder justice and environmental enforcement.

To get the word out, my office has produced "Force Multiplier," a free guide to the resources we offer. The first two sections look at specialized teams and technical tools, as well as crime lab services. The third section focuses on the types of investigations that BCI and other areas of my office take on, and the assistance that our Special Prosecutions and Crime Victim Services teams

can provide. The fourth section highlights ways that the AGO can help law enforcement agencies through training, equipment and grants.

We intend to get a physical copy of the guide to every law enforcement agency in Ohio and also offer it for download on the AGO website at www.OhioAttorneyGeneral.gov/ForceMultiplier. In addition, it will be available at this year's Law Enforcement Conference (LEC), set for Oct. 24-25 at the Hyatt Regency Columbus.

I hope to see you there. Law enforcement is a team effort — within your own agency, with neighboring agencies, and with state and federal partners. The connections you make during the conference could someday open the door to crucial information or streamline the path to an



unexpected collaboration.

The role you play in law enforcement is critically important. Because my office shares in your mission and is committed to your success, we are happy to bring you the LEC every year. And this year, we have the added pleasure of offering the Force Multiplier resource guide.

Together, I hope they serve to make your job easier and your community safer.

Dave Yost
Yours,
Dave Yost
Ohio Attorney General

Featured speakers

- Michael Black**, U.S. marshal for the Southern District of Ohio
- Russell Martin**, former Delaware police chief and Delaware County sheriff
- Air Force Lt. Col. Dan Rooney**, founder and CEO of Folds of Honor, F-16 fighter pilot, PGA golf professional, and best-selling author and Fox News contributor

Also of note

Join a panel discussion with BCI Cold Case Unit experts as they focus on unsolved case methodology, case file assessment, obstacles to unsolved investigations and resources available to law enforcement.

LEC
LAW * ENFORCEMENT * CONFERENCE

When: Oct. 24-25, 2023
Where: Hyatt Regency Columbus
www.OhioAttorneyGeneral.gov/LEC

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More law enforcement agencies benefiting from BCI's NIBIN expansion

Ohio law enforcement agencies are taking advantage of the Bureau of Criminal Investigation's expanded system of NIBIN stations for entering crime gun evidence into the nation's digital ballistics database.

Earlier this year, BCI installed a total of five NIBIN stations at three of its crime laboratories across the state. Labs in Bowling Green, London and Richfield now have two each. Previously, only Richfield had a NIBIN station.

NIBIN is shorthand for the National Integrated Ballistic Information Network, operated by the federal Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF). NIBIN stations make 3D scans of cartridge cases found at crime scenes or produced from the test-firing of recovered crime guns.

The markings on those digital images are automatically compared to markings on millions of other cartridge case images in the database, resulting in a list of possible matches and possible connections to other gun crimes in Ohio and across the country.

Jennifer Duvall, who manages the Comparative Sciences Laboratory at BCI, said 92 law enforcement agencies that had never previously submitted ballistics evidence to NIBIN through BCI have done so this year.

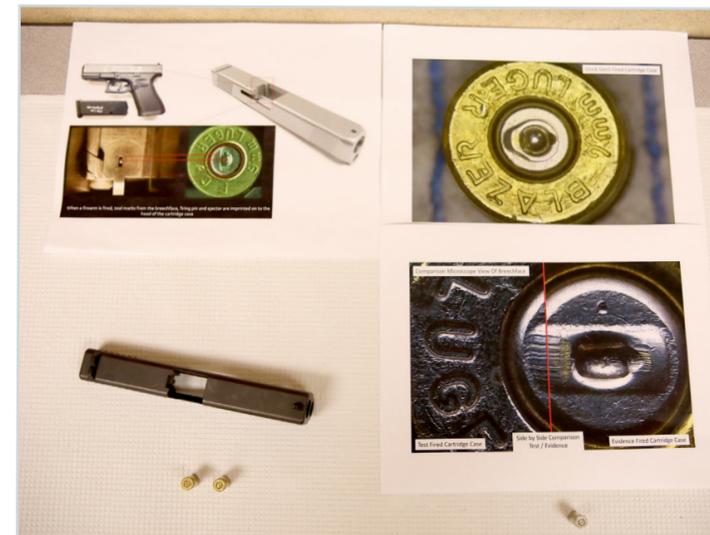
From January through July, BCI entered 2,338 cartridge cases into NIBIN from all the law enforcement agencies that submitted evidence, an average of 334 entries per month. Over that same span, NIBIN generated 443 leads as a result of correlation analysis — 99 in July alone. The information was then reported back to the originating agency to follow up.

A NIBIN lead is an unconfirmed, potential



NIBIN training videos

BCI and the Ohio Peace Officer Training Academy have produced a series of general training videos on NIBIN. The videos are available through the OPOTA Online portal, under the "Roll Call Refreshers" catalog, at <https://opota.OhioAttorneyGeneral.gov>.



BCI now offering training on entering evidence into NIBIN

A NIBIN technician at BCI's Richfield lab recently completed instruction through the ATF that certifies him as a NIBIN authorized trainer, allowing him to train law enforcement officers, other techs and scientists to conduct NIBIN triage and acquisition.

Triage is done to determine which cartridge case (from a group of cartridge cases) should be digitally scanned into the NIBIN database — a process known as acquisition.

By having a certified NIBIN trainer on staff, BCI will save Ohio law enforcement agencies the time and money involved in sending their officers to the ATF National Correlation and Training Center in Huntsville, Alabama, for instruction. Officers trained and certified to use NIBIN can use the stations at BCI's Bowling Green, London or Richfield labs to enter crime gun evidence into the database without delay — a key step in keeping a hot case from going cold.

Law enforcement agencies interested in NIBIN training can contact BCI at 855-BCI-OHIO (855-224-6446).

association between two or more cartridge cases in the database; it is based on a correlation review by trained NIBIN technicians. A NIBIN hit occurs when two or more cartridge cases are identified as a match after a microscopic comparison by a firearms examiner.

BCI's labs are directly linked to the ATF's NIBIN National Correlation and Training Center (NNCTC) in Alabama, so cartridge cases collected from crime scenes can be sent through NIBIN to the center and analyzed within hours.

If needed, BCI's Criminal Intelligence Unit can help law enforcement agencies develop any NIBIN leads they receive.

Continued from Page 1

Imagine how much more helpful it would be if, in addition to a clay model, the public could view the head as photo-realistic digital images — composite views that show different skin tones, hairstyles and other attributes at different stages of aging, and from multiple angles.

That’s exactly what BCI was able to provide to Stark County Sheriff George T. Maier and County Coroner Ron Rusnak in September to aid their efforts in identifying two sets of human remains discovered in Canton nearly 20 years apart. (See cover photos.)

BCI’s ability to provide a variety of digital depictions of the decedents’ faces represents a significant advance and brings new hope for future unidentified-remains cases in Ohio. More immediately, however, it means the public will get a far better idea of what the two Stark County John Does might have looked like, thereby increasing the chances that someone will be able to assist in identification.

The addition of photo-realistic digital composites as part of BCI’s facial reconstruction process came about because of an evolving partnership that criminal analyst Samantha Molnar developed with Ohio State. It began soon after Molnar took on the additional role of forensic artist in 2015.

To make a clay bust, she first needed a CT scan of the skull she was working with. Using the digital data from the scan, she could then make a plastic model of the skull using a 3D printer. With the plastic model in hand, she could apply the clay to create the bust, adjusting for physical traits determined by an anthropological analysis of the skull.

The CT scans would need to be done at a hospital. For the 3D printer, she turned to Ohio State, which offered its services free. But the time involved in printing the 3D model could take several days, largely because of the huge amount of data in the CT scans.

A turning point came in 2019, when Molnar was working on a Jane Doe case out of Cincinnati. For whatever reason, the 3D printer could not process the CT data of the woman’s skull. A colleague at Ohio State suggested another way: Instead of a CT scan, why not use photogrammetry to acquire the data needed to make the 3D model? It worked so well that Molnar has never gone back to CTs.

Photogrammetry is a technique that renders a 3D digital image of an object — in this case, a skull — based on a series of overlapping photographs taken from numerous vantage points. In 2019, to get those photos, Ohio State’s Advanced Computing Center for the Arts and Design (ACCAD) used a connected array of multiple cameras that took hundreds of shots as the skull slowly turned on a revolving platter.

The resulting data was far less complex than a CT scan, thereby shortening the time needed to print a 3D model. But the overall process remained lengthy.

Thankfully, photogrammetry has advanced considerably since then. Today, Molnar can take 50 to 60 photos of a skull with her iPhone, email them to ACCAD and have a 3D model printed the same day.

Another turning point came two years later, in 2021. Molnar was asked by the Stark County Coroner’s Office to create a bust of a white male whose remains were found in Canton the year before. When the bust failed to produce any leads from the public, Stark County officials came knocking again. Could she re-sculpt the bust with longer hair and add facial hair, as the man might have looked if he were homeless?

It just wasn’t practical, given the time involved.

“The thing that’s limiting with a clay model is once it’s done, it’s done,” Molnar said. You’re kind of locked in.”



“The advantage of the new technology that we’re implementing through Ohio State is that it allows us to quickly edit the digital image to change features.”
— BCI criminal analyst and forensic artist Samantha Molnar, pictured above

About this time, her colleagues at Ohio State became aware of her frustration and introduced her to a graduate student who was familiar with software that could give Molnar the flexibility she was looking for.

Coincidentally, she also had recently received another skull from Stark County, that of a black male whose remains were found in Canton in December 2001.

So now she was working on busts for two Stark County John Does, and the software that she was about to explore — MetaHuman — would shine new light on both men.

MetaHuman was developed with the gaming community in mind and allows players to apply a wide range of facial features and skin tones to the avatars they create.

Molnar knew she was on to something.

Working with her Ohio State colleagues, she could take photos of the clay bust she had built, upload them into MetaHuman, and generate the diverse combination of faces that Stark County officials had requested. And she would do the same with the second John Doe.

“The advantage of the new technology that we’re implementing through Ohio State is that it allows us to quickly edit the digital image to change features,” Molnar said. “So, if somebody calls in a tip and asks to see the face with lighter skin or the head with a different hairstyle, we’re able to accomplish that much more easily than we could have in the past.”

The technology isn’t there yet, but Molnar can envision a time when digital busts from unidentified-remains cases might be posted on a website that allows the viewer to change facial features just by clicking on the image.

“A public interface could create more publicity and generate more leads in these cases,” she said. “I think the idea will eventually gain traction.”

Cold Case Unit By the Numbers

In fiscal year 2023, which ended June 30:



Tenacity, technology trip up serial murderer

For more than half his life, Robert Edwards evaded justice. But law enforcement’s persistence and the continuing evolution of DNA technology finally put him behind bars for the rest of his earthly existence.



Edwards, 68, was convicted July 14 of killing Alma Lake in 1991 and killing and raping Michelle Dawson-Pass in 1996. Both central Ohio women were strangled. In August, Edwards was sentenced to life in prison without possibility of parole for 45 years.

“At the end of the day, there is no such thing as a cold case,” Attorney General Dave Yost said, “just a case in which the next lead is waiting to be found. And in this case, the key lead was found because of advances in DNA technology and investigators who never gave up.”

A turning point came in 2020 when the sheriff’s offices in Franklin and Licking counties asked the Cold Case Unit at the Bureau of Criminal Investigation to take a fresh look at both cases.

BCI’s Laboratory conducted advanced DNA analysis on evidence collected at both scenes. But the DNA profile they developed did not match any in the FBI’s Combined DNA Index System (CODIS), which contains DNA profiles of convicted felons or anyone arrested and charged with a felony.

Investigators then began searching the database to see whether they could link the DNA profile to any possible biological relatives, which ultimately led them to Edwards in March 2021.

Edwards denied knowing the victims, but a DNA sample taken from him confirmed a direct match between Edwards and the DNA left on the victims.

“This is a great example of never giving up and law enforcement agencies working together and sharing resources,” Franklin County Sheriff Dallas Baldwin said.

Lake’s nude body was found on June 3, 1991, in Urbancrest, in southwest Franklin County. She was 30. More than five years later, Dawson-Pass, 36, was found dead in Granville, in Licking County.

“This case was solved by boots on the ground, directed by scientists in the lab,” Licking County Sheriff Randy Thorp said. “I appreciate the collaboration and coordination from BCI to solve this case.”

Edwards may have been involved in other sexual assaults or homicides. Agencies that believe they have additional information related to him should contact BCI at 855-BCI-Ohio or Intel@OhioAGO.gov.



Sheriff Christopher Hilton and staff members congratulate graduates during the award ceremony.

Lessons in hope & compassion

Educational program at Sandusky County Jail provides a first step to a second chance

It wasn't a big graduating class, but the occasion was a big deal nonetheless. Seven inmates — six women and one man — sat on folding chairs in a multipurpose room of the Sandusky County Jail in Fremont as they listened to Sheriff Christopher Hilton and Ohio Attorney General Dave Yost commend them for voluntarily completing a new merit-based education program that's as much about hope as it is about learning.

Loved ones and educational partners made up much of the audience, with members of the news media also on hand. Tongues of flames decorated the walls, a can't-miss reminder of the energy that the IGNITE program is meant to spark.

"We're all flawed in different ways," Yost told the graduates. "But each of us has dignity and intrinsic value as human beings, and IGNITE affirms that truth. ... I believe that this day, which recognizes your graduation and the work you've done here, is what sets you apart and makes you ready for that second chance."

As names were called and certificates of completion handed out, the emotion took center stage.

The first graduate, James Baker, looked to the audience and beckoned his son, Jacob, to join him. As the sheriff, his staff, the Attorney General, other graduates and the audience looked on, the two men — one awaiting trial on charges of aggravated vehicular homicide, the other pursuing a college degree in law enforcement — hugged. Then the tears came.

IGNITE was created by Sheriff Christopher Swanson in Genesee County, Michigan, in 2020 and was soon endorsed by the National Sheriffs Association. Nationwide, 10 IGNITE programs have been established and four more are about to launch. In total, jails in 13 states are participating. Each program reflects different stages of development and the unique needs and means of the individual sheriff's office involved.

At its core, the program offers classes, taught by community partners, that help inmates with life skills, job preparedness, and post-incarceration work opportunities.

Beyond its educational benefits, the program creates a more structured environment for participating inmates and offers incentives, such as extended dayroom time and various food treats. More broadly, the program contributes to a safer atmosphere in the building.

Since launching in March, the Sandusky County IGNITE program has

Yost announces task force on future of LE training

Attorney General Dave Yost has announced the formation of a blue-ribbon task force to examine the future of police training in the state, exploring how best to create and deliver world-class continuing education for the state's roughly 30,000 law enforcement officers. Yost expects the task force to return its recommendations by mid-January. "We've dismantled the old curriculum system at the Ohio Peace Officer Training Academy and are taking steps to replace it with state-of-the-art technology, techniques and courses that officers can look forward to taking," he said. The task force, consisting of leaders from Ohio's policing community, will be chaired by OPOTA Assistant Executive Director Thomas Quinlan — the former Columbus police chief who, as commander, oversaw the Columbus Police Training Academy.

OPOTA adds 6th regional training site to lineup

Owens Community College in Perrysburg, about 10 miles south of Toledo in Wood County, recently joined the list of regional providers that are delivering OPOTA-certified training to Ohio peace officers as part of the Close to Home program. The program, created to augment the in-person offerings at OPOTA's main campus and Tactical Training Center in London, gives officers greater access to advanced training while helping to reduce the time and expense involved in overnight travel. Since Close to Home launched in 2022, the number of courses offered and officers attending training at the regional locations has more than quadrupled — from 17 courses to 71, and 157 students to 639.

offered about 135 hours of classes. Topics focus on addiction and recovery services, mental health, financial literacy and home-buying basics, career readiness, and parenting education, said Caren Nemitz, who recently took over as program coordinator.

This was the second IGNITE graduation for the Sandusky County Jail and the first one open to the public. Twelve men and five women were in the inaugural class in May.

So far, the Sandusky County Jail is the only jail in Ohio to launch an IGNITE program, although other sheriffs have reached out to Hilton to talk about his success.

Hilton and several staff members were quickly sold on the program after traveling to Flint to see it in action at the Genesee County Jail.

When he committed to launching a program of his own, Hilton insisted that every participating inmate should take four hours of mental health

Project that tests video-feed access for police is extended

The Attorney General's Office has extended a Miami Valley pilot project testing the effectiveness of a web-based tool that can give law enforcement agencies quick access to public and private video feeds to help solve crimes.

Police departments in Dayton, Miamisburg, Trotwood and West Carrollton as well as the Montgomery County Sheriff's Office are participating in the project, called TALEN, short for Technology Anonymized Law Enforcement Notification. At the heart of the project is an online platform that uses public and private video feeds from cameras monitoring schools, traffic, parks, shopping areas and other locations. Doorbell cameras can be added to the network with permission from residents.

"TALEN is like a supercharged, technology-enabled neighborhood watch," AG Yost said. "It's a major force for good."

The pilot project began in 2020 and will now run through June 2024. The extension allows for additional data collection and for greater feedback from law enforcement, businesses and the community. To date, TALEN has been successfully used in investigations of a homicide, a felonious assault and a juvenile drowning, and in a school-safety response exercise.

3 human-trafficking task forces chalk up major wins

Cross-department law enforcement task forces formed under the Ohio Attorney General's Ohio Organized Crime Investigations Commission continued to advance the state's fight against human traffickers and sexual predators, with three of these units reporting successes this summer.

- On July 11, the Summit Regional Human Trafficking Task Force arrested and charged nine men during a one-day operation aimed at buyers of sex.
- The Mahoning Valley Human Trafficking Task Force saw a long-term investigation come to close when a Lowellville resident was sentenced on July 12 to 24 years and three months in prison for sexually exploiting a minor.
- A long-term investigation by the Northeast Ohio Human Trafficking Task Force culminated in June with the conviction and sentencing of a human trafficker and one co-conspirator. Another co-conspirator had previously been convicted and sentenced. The three ran a commercial sex-trafficking operation out of hotels in Warrensville Heights and an apartment building in Maple Heights.

CPT reminder: Log hours now to avoid end-of-year problems

OPOTA is strongly encouraging law enforcement agencies to act now to report continuing professional training hours accrued by their officers in 2023. Agencies must report CPT hours and their officers' hourly rates on the OPOTA Portal, at <https://opota.ohioattorneygeneral.gov/>. The online system, new this year, was designed for agencies to report throughout the year. An instructional video is available on the portal homepage.

Timely reporting of CPT hours has two key benefits for agencies: They are reimbursed quicker and avoid the risk of having their officers ordered to "cease function" for not completing and logging CPT. In that event, the Ohio Peace Officer Training Commission would need to review each case before an officer could return to duty.



AG Yost took a few minutes from his speech to talk directly to the IGNITE graduates.

and addiction education. In fact, his insistence on addressing this core problem among inmates won over the Mental Health and Recovery Services Board of Seneca, Ottawa, Sandusky and Wyandot Counties, which provided essential funding to get the program off the ground.

And when he appealed to community partners to teach the courses, they were equally enthusiastic.

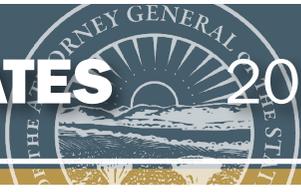
"The response we got from businesses and stakeholders in the area was unbelievable," Hilton said.

Participating organizations include Alcoholics Anonymous and other addiction recovery and support organizations, a bank, a church, a packaging company, Local Ironworkers 55, and a nonprofit devoted to literacy, mental health and family stability.

Carlee Fairbanks, the jail's first IGNITE coordinator who now directs the program, said the sheriff's office wants to create an online platform for classes and a virtual reality program to teach skilled trades like carpentry and electrical services.

"We've only scratched the surface of what this program can be," Hilton said. "This is about changing mindsets, changing the culture. We're trying to provide opportunities so our inmates never walk back into this facility again. I want to see them all succeed."

Sheriffs interested in starting an IGNITE program can reach Sheriff Hilton at (419) 334-6444 or chilton@sanduskycountyoh.gov



Mark Your Calendar

Coming next year

HUMAN TRAFFICKING SUMMIT

Human Trafficking Summit moving from January to August

The Attorney General's Human Trafficking Summit, which in previous years has convened in January at the Greater Columbus Convention Center, is moving to a new month next year. The 2024 summit — the fifth presented by Attorney General Dave Yost — will take place in August. Additional details will be posted at www.OhioAttorneyGeneral.gov/HumanTrafficking as they become available.

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