

**FBINAA CHARITABLE FOUNDATION
2023 SCIENCE AND INNOVATION AWARD NOMINEES**

In 2023 the Charitable Foundation Science and Innovation Award received nine nominations for programs, projects, and products. Since the purpose of this award is to recognize and promote creative thinking and problem-solving, it is worthwhile to share each nomination. Maybe a project or program can be replicated in your agency or community; maybe it can be adapted to fit your unique needs; or maybe it will spark a totally new idea that you can put to work.

Every one of these nominations is worthy of the spirit of our award.

Thank you to the NA members who served on the expanded 2023 selection committee: Bill Berger, Florida; Nick Onken, New Mexico; Jeff Tate, Minnesota; Brian Gould, New York; Alan Ruhl, Section 3 Director, Tennessee; and Rob Bryan, Georgia.

The winner of the 2023 Science and Innovation Award is the Appalachian Law Enforcement Initiative.

APPALACHIAN LAW ENFORCEMENT INITIATIVE – OHIO UNIVERSITY, ATHENS, OHIO

The Appalachian Law Enforcement Initiative (ALEI) is a collaboration between Ohio University's Game Research and Immersive Design (GRID) Laboratory, Ohio University's Voinovich School of Leadership and Public Service, Athens, Ohio Police Department, Ohio University Police Department, and the Athens County, Ohio Sheriff's Office.

The collective goal was to determine if law enforcement officers in rural America would accept and embrace soft-skill virtual reality technology as an effective mode of training. The objective was to create a cinematic virtual reality (VR) training experience that would benefit smaller agencies with limited training budgets.

Cine-VR differs from traditional VR in that it is created by cameras rather than digital avatars. It creates a sense of immersion because it uses live actors on actual movie sets. This allows officers to experience a situation in 'near real life.' Further, pre-recorded VR experiences provide flexibility for training when the officer is readily available, not in a scheduled class setting.

The project started in the rural Appalachian foothills of Ohio, where distance, small populations, and low budgets make training difficult. Two scenarios with two different versions of each are used; each situation lasts 20 minutes, followed by a debrief. Users report a very positive response to the training, with broad agreement that VR training should be incorporated into law enforcement training and that such training was very likely to improve the outcome of police-citizen interactions.

For more information: John Bowditch, 740-591-0383, bowditch@ohio.edu

Here are brief summaries of the remaining nominees, in alphabetical order, with contact information.

CASE SERVICE REPORTING - VERSATERM

In May of 2023, Versaterm introduced artificial intelligence (AI) into non-emergency reporting through a system that allows citizens to report non-emergency events by communicating with a virtual investigator by voice, mobile, web chat, or text messaging. The program is known as Case Service Reporting.

The conversational AI guides reporting parties through the filing process by listening, questioning, and adapting to responses. The virtual investigator writes a NIBRS-compliant report and provides key details to the police department. It can even recognize a genuine emergency that requires escalation. Once a report is approved by records, the case is assigned to an investigator for further action. The system follows up automatically with the caller after a report submission, providing relevant updates on their case.

All of these features reduce the burden on call-takers and first responders.

The Austin Police Department is the first US agency to use Case Service Reporting.

For more information: Rohan Galloway-Dawkins, 613-820-0311, rohan.dawkins@versaterm.com

GUARDIAN - CELLEBRITE

Digital evidence has rapidly overtaken physical evidence in investigative importance. However, the collection, management, review, and analysis of digital evidence is inconsistent.

Guardian is a software product that supports the entire digital forensic lifecycle. It changes the landscape of traditional digital forensic investigation, allowing investigators to immediately access, review, and analyze evidence from any device and from any location. Storage and retention management is unlimited, alleviating the financial burden that is a significant problem.

Notable reduction of time needed, and cost associated with digital investigations can be attained.

For more information: Marque Teegardin; (678)-908-3989; marque.teegardin@cellebrite.com

INFRARED PHOTOGRAPHY IN GUNSHOT RESIDUE EVIDENCE COLLECTION – OXNARD POLICE DEPARTMENT

In gunshot related homicides, it is uncommon to recover the victim's clothing at the crime scene. At the same time, gunshot residue, often found on the victim's clothing, is transitory in nature and can easily be disturbed or lost during transportation of the victim to the medical examiner. If muzzle-to-target distance testing is required, this disturbance may cause inaccurate results.

The Oxnard (California) Police Department has tested the on-scene use of an infrared camera to document gunshot residue on clothing. The only other option is a laboratory-based test. Through their research and experiments, it was determined that the two methods are not fully equivalent, but each has its usefulness in producing different viewpoints of the same object.

For more information: Jeffrey Kay; 805-385-8174, jeff.kay@oxnardpd.org

LATENT FINGERPRINTS IN DUST – CURTIS FRAME

Curtis Frame, of Jasper, Texas has developed and perfected a technique for collecting fingerprints in dust, even after a suspect has tried to brush away any fingerprint evidence. His technique is being taught across the country, including at the FBI Academy in Quantico. An article that he authored has been read and used in law enforcement classes for more than 30 years, and it has made a valuable contribution to the process of collecting evidence.

For more information: Curtis Frame; 409-289-3881, curts.works@gmail.com

LPR/SURVEILLANCE CAMERA PROJECT – GALLATIN POLICE DEPARTMENT

The City of Gallatin, Tenn., has a population of approximately 45,000 served by a police department of about 100 sworn members. The department identified a need for surveillance cameras in various areas of the city to monitor safety, identify crime suspects, and deter criminal activity. However, a commercial system was not affordable within the department's budget. The police department's Information Technology Division was tasked with investigating whether a system could be built from scratch.

After research was complete, the police department ordered camera housings and solar powered cameras that were assembled into functional systems, including a blinking blue light to indicate to anyone that the camera was recording. The local power company was enlisted to assist in the effort by installing these cameras in areas of high need within the city. The cameras were linked to the dispatch center and the patrol division for continuous monitoring.

Police noticed an immediate decrease in crime in the covered areas. In order to capitalize on this success, members of the department built additional cameras that were placed along a system of greenway walking trails and within city parks. Two more cameras were built with the express intent of being able to deploy them to hot spots as needed.

This system was built at a fraction of the cost of a commercial system, reducing crime while saving the community tax dollars.

Creativity has continued to benefit the citizens and the department. The Information Technology Division also converted an obsolete speed trailer to a mobile license plate reader for use at various intersections and other areas of the city to identify criminals at the scene of thefts and related crimes. The camera and LPR systems are responsible for many solved cases and arrests in Gallatin. Citizens compliment the systems for an increased sense of safety in public places, and apprehended criminals complain about their use.

For more information: Bart Layne; 615-504-9900, blayne@gallatinpd.org

POLICE LEADERSHIP SELECTION PROCESS – CATRINA RHATIGAN

Ph.D. candidate Catrina Rhatigan has begun a study of the different types of police promotion testing and processes across the United States. For comparison purposes, she has also studied the same elements of police promotion in Japan, a federally managed policing system.

Research indicates that federal uniformity and oversight is needed for police promotion standards. Future study expects to have a major impact on revamping and implementing nationwide standards and testing for police promotions.

For more information: Catrina Rhatigan; 516-749-4960, catrina.rhatigan@gmail.com

TOUGHBOOK 40 – PANASONIC CONNECT

The Panasonic Toughbook 40 represents the next step forward in ruggedized docking laptops. It features user-friendly modular expansion packs: optical drives; authentication readers; IO ports; and barcode reader are user upgradable. Options include a dedicated graphics processing unit, up to 64 GB of RAM, up to 3TB of storage, and all-day battery life. Cellular modems are 4G or 5G, which will connect to the best available network without disruption or loss of connectivity. It has the first 5MP webcam in the class.

For more information: Anthony Mungiello; 201-392-6097, Anthony.mungiello@us.panasonic.com

VISION 2023 – HAMILTON COUNTY SHERIFF'S OFFICE

Over a four-year period, the Hamilton County, Ohio Sheriff's Office moved from what is only described as "outdated" to implementation of state-of-the-art technology in every aspect of the agency. Patrol, investigations, analytics, and narcotics cases were positively impacted. Some examples:

- Records management was upgraded from paper to electronic
- Upgraded ALPR technology
- Pursuit mitigation
- Forensic software
- Purchase and integration of 12 drones assigned to patrol and investigative districts
- Addition of intelligence analysts
- Conversion to state-of-the-art investigative tools – crime scene mapping, covert GPS and camera applications

Deputies with the agency have experienced a sense of pride in the progress made by the agency in a short time span. Investigators have access to far more resources to assist in solving crimes.

For more information: Brian Stapleton; 513-352-3673, bstapleton@hcsso.org