Accelerating investigative leads:

How the Missouri State Highway Patrol built a statewide Rapid DNA program

Case study: transforming investigative timelines with statewide Rapid DNA deployment

When the Missouri State Highway Patrol (MSHP) envisioned deploying Rapid DNA technology across its nine troop locations, the objective was clear: enable investigators to access DNA-based leads more quickly. However, implementation proved more complex than anticipated. Early efforts were challenged by competing operational priorities, limited resources, and the need to effectively integrate Rapid DNA into existing workflows.

With the establishment of dedicated internal leadership and structured support from the Thermo Fisher Scientific Rapid DNA enablement team, the MSHP overcame these initial hurdles and built a fully operational statewide program. Today, Rapid DNA helps provide investigators with timely, actionable leads—supporting earlier investigative direction while helping optimize the use of forensic laboratory resources.

The challenge: scale, complexity, and competing priorities

The MSHP's crime laboratory system is led by Director Brian Hoey, a 33-year veteran who has served as criminalist, technical leader, and director. The MSHP's goal was to decentralize DNA testing capability to troop locations while maintaining data integrity, security, and alignment with existing forensic workflows. He understood that deploying Rapid DNA statewide would require navigating technical and organizational complexities, particularly given the limited capacity for forensic scientists to take on additional program management responsibilities throughout the organization.

> "We launched the Rapid DNA program several years ago, but it faced several challenges, including the impact of COVID-19. Initially, we struggled with finding the right leadership structure and securing buy-in from our teams."
>
> **— Director Brian Hoey, MSHP Crime Laboratory**

The IT environment added another layer of difficulty. The MSHP operates under strict Criminal Justice Information Services (CJIS) rules, meaning every instrument connection, data pathway, and network integration had to meet rigorous federal security standards. This was not a plug-and-play situation.

The turning point: dedicated program leadership

The program gained momentum when the MSHP established a dedicated Rapid DNA program manager. Adam Benne, a 24-year MSHP crime laboratory veteran, brought operational structure and cross-functional coordination to the program. Benne's background was in drug chemistry, not DNA, which Director Hoey saw as an asset rather than a limitation.

"Adam brought the necessary 'boots-on-the-ground' leadership," Hoey said. "His background as a chemist, rather than a DNA specialist, was helpful in his approach and provided a fresh perspective. He is not only a strong leader, but he is also action-oriented."

Benne assembled a cohesive team, coordinated with IT for connectivity, built the infrastructure, and drove the project forward. His role filled a critical gap: someone who could manage day-to-day operations, establish accountability, and keep the program moving through an organization with many competing demands.

Enablement in action: advancing deployment to operational use

With Benne driving internally, the Rapid DNA enablement team provided structured support and experience throughout the development of the program. Benne served as the central coordination point, keeping the MSHP on schedule through regular check-ins and defined project management.

The enablement team's impact extended well beyond logistical support. Drawing on experience from deployments at agencies nationwide, the team helped the MSHP identify and address potential challenges before these hurdles disrupted operations. The enablement team also understood which stakeholders needed to be engaged—and at what stage—including forensic personnel, IT teams, and external vendors.

"The Rapid DNA enablement team took the time to learn our organizational structure and language, which made communication much easier," Hoey said. "They created a smooth working relationship that helped us reach our goals."

On the IT side, collaboration was particularly important. The enablement team worked directly with the MSHP's internal IT personnel to navigate CJIS compliance requirements, offering technical advice while building trust with an understandably cautious IT team.

> "Our IT setup is complex due to strict CJIS rules. The Thermo Fisher team worked closely with our internal IT personnel, providing both technical experience and flexibility. This was instrumental in building trust and facilitating smooth operations."
>
> **— Adam Benne, MSHP Crime Laboratory**

Adapting to a moving target

A statewide rollout rarely follows a straight line, and deployment doesn't automatically translate to use. With Benne leading internally and the enablement team providing structured support, the program was able to adapt as needs evolved. Their flexibility and responsiveness helped the MSHP navigate challenges, adjust course when needed, and apply lessons learned from other agency deployments.

"The team was very flexible and responsive to our needs. They helped us pivot when necessary and provided valuable insights from their experience with other labs," Benne said. "This collaborative approach was central to our success."

At the same time, the enablement team's involvement helped reduce the operational burden on the MSHP's forensic scientists. By supporting coordination and program management activities, they enabled laboratory staff to remain focused on casework—an important consideration for a system already operating at capacity.

Together, the MSHP and the enablement team addressed adoption barriers by establishing clear ownership, aligning workflows, maintaining regular stakeholder communication, and engaging IT and analysts early to minimize additional burden on forensic staff. This approach helped transition the program from availability to active use.

Proven Rapid DNA enablement process:

1. Project planning

Enablement specialists and project managers consult with you and review the scope and scale of your program.

2. Workflow design

Our service team performs a comprehensive workflow design, including deployment type, data transmission, and integration with any third-party products.

3. IT solutions architecture

For large, distributed programs, an IT integration engineer develops network diagrams and data flows with agency IT to document key elements of the program.

4. Vendor integration

Specialists coordinate with third-party professionals to confirm communication between our systems and other applications in the workflow.

5. Workflow verification

IT and enablement specialists assist with the final end-to-end workflow verification to confirm that results are sent to the appropriate location(s).

Where the program stands today

The MSHP has achieved full statewide deployment of Rapid DNA capability:

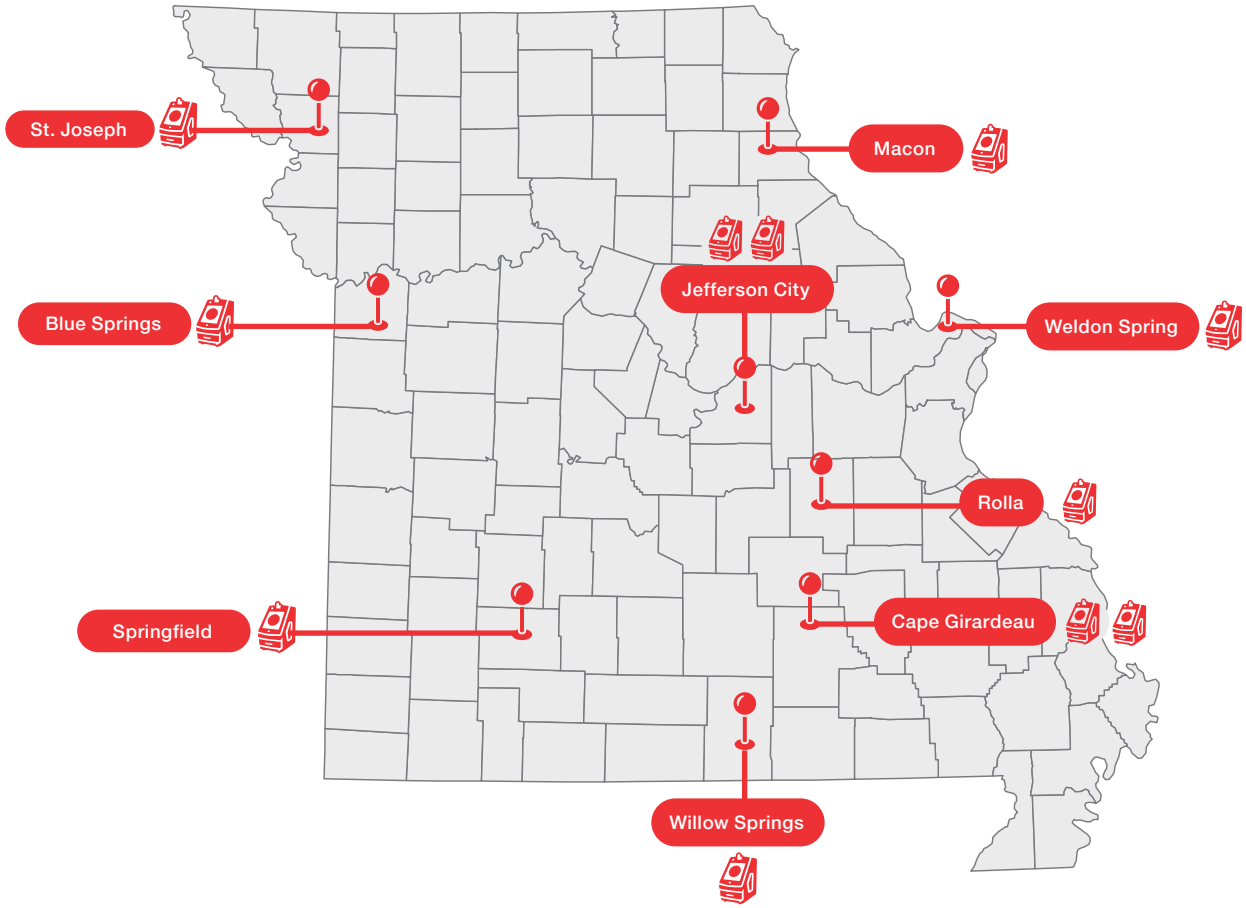
- Operational instruments across nine troop locations and seven forensic laboratories
- Integration with the state DNA database and MSHP IT infrastructure
- Established, validated Rapid DNA investigative lead workflows

MSHP Rapid DNA instrument deployment across Missouri:

11 instruments

9 cities

1 statewide program



Lessons learned from the MSHP's statewide deployment:

- **Establish dedicated program leadership early**
- **Align IT, labs, and law enforcement at the outset**
- **Define use cases before scaling deployment**
- **Prioritize workflow clarity over instrument placement**
- **Track utilization and participation, not just installation**
- **Engage IT early to address connectivity and compliance**

Looking back, what support and internal factors were most important in moving the program forward?

"Start with a clear vision and engage the Rapid DNA enablement team early. Their practical experience can help you develop a structured implementation and avoid common pitfalls. Surround yourself with knowledgeable partners and be flexible in your approach."

— Director Brian Hoey

"The Rapid DNA enablement team helped establish accountability and a clear timeline. The knowledge, experience, and guidance they provided were critical in keeping us on task and enabling the project's success. Additionally, their assistance with this program relieved our scientists from having additional work thrown at them, so they could focus on casework."

— Adam Benne

About the interviewees

Director Brian Hoey is a 33-year veteran of the MSHP crime laboratory, where he has served as a criminalist, technical leader, and director. He has held member and officer positions with the Scientific Working Group on DNA Analysis Methods (SWGDAM) and the Midwestern Association of Forensic Scientists (MAFS), receiving the MAFS Outstanding Scientist award in 2016. Director Hoey is also a member of the Forensic Laboratory Needs Technical Working Group (FLN-TWG), the American Academy of Forensic Sciences (AAFS), and the American Society of Crime Laboratory Directors (ASCLD).

Adam Benne is a 24-year veteran of the MSHP crime laboratory. He has worked as a drug chemistry criminalist and technical leader, and he now serves as a manager over several operational areas encompassing nearly every forensic discipline. Benne also serves as the laboratory's Rapid DNA program manager.

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