Building the Future Of Forensic Science

The National Forensic Science Technology Center stands out in support and defense of the safety of every community. Our neighbors across the country benefit every day when their law enforcement officers have solid forensic skills, when their crime lab is able to process their work efficiently and accurately and when members of their families can be found should they ever go missing. NFSTC delivers time and time again with services and training that are both cutting edge and crucially needed. When the criminal justice system works, our communities are safer and the NFSTC mission is achieved.

Our Mission and Vision—Consistent and Clear

Our vision: For the forensic science community and its users to have complete confidence in the quality of the science services provided to the justice community as it strives to ensure the public safety.

Our mission: We are dedicated to supporting the justice community in ensuring the public safety by assisting the forensic sciences in the achievement of the highest level of quality services.

Established Quality, New Look

Since 1995, NFSTC has been dedicated to serving the needs of the justice community through the application of science. And NFSTC has become a leader in forensic services by delivering quality and reliability in every project. As part of our efforts to reach out to the community to share who we are and what we do, NFSTC proudly unveiled a new look and Web site in 2009, creating a more unified and accessible online presence and modernizing many of our outreach mechanisms to better serve our many stakeholders.

In addition, to better serve our ever-growing base, NFSTC’s GSA schedule was broadened to include MOBIS, enhancing our ability to serve our contract clients and bringing a wider range of capabilities to the forefront.
Forensic Technologies Center of Excellence (FTCoE)

Cooperative Agreement Award #2008-MU-MU-K003

Since September 2007, NFSTC has been honored to manage the Forensic Technologies Center of Excellence for the Office of Justice Programs–National Institute of Justice (OJP-NIJ). The FTCoE continued to deliver in 2009, providing coordinated services and knowledge to the industry through the partner organizations:

- National Forensic Science Technology Center
- Marshall University Forensic Science Center
- National Clearinghouse for Science, Technology and the Law
- National Center for Forensic Science
- Midwest Forensics Resource Center

Technology Transition Activities

One of the primary functions of FTCoE is to facilitate the adoption of technologies that meet the requirements of practitioners in the field. Technology transition activities include technology evaluations, workshops to train users, and technology demonstrations at conferences and industry trade shows. Among the projects delivered for the Center in 2009:

Evaluations

NFSTC scientists and partners through the FTCoE regularly evaluate tools and technology for the forensic community. To fully evaluate the performance of a given technology, NFSTC evaluates all tools to assess their performance in different areas including conformity, reproducibility, sensitivity, specificity, maintenance, portability and sample requirements.

Results are shared as scientific posters and evaluation reports, which are available at no charge online at www.nfstc.org. In 2009, conducted the following evaluations:

- Portable UV-VIS Spectrophotometer for Determination of Time Since Deposition of Bloodstains at a Crime scene
- Comparison of Monochromatic Light Source and Banded Light Source for Detection of Evidence
- Evaluation of PowerPlex® 16 HS Amplification Kit
- HazMatID FTIR
- PHAZIR™ Handheld Near-Infrared Analyzer
- Comparing the Effectiveness of Varying the Amount of Manual Buffer Washes to Use of the QIAcube™ When Performing the QIAGEN MinElute® Post-PCR Clean Up
- Comparison of Monochromatic Light Source and Banded Light Source for Detection of Evidence

Workshops

The following technology transition workshops were delivered and are available online at projects.nfstc.org. The site includes workshop agendas, video of the presentations and the presentation files.

- Field Investigation Drug Officer (FIDO) workshops (May 2009), 36 attendees
- Latent Fingerprint Image Enhancement (August 2009), 12 attendees
- MinElute Post PCR Clean Up (September 2009), 12 attendees
- Forensic SNP Analysis (November 2009) University of North Texas, (11 attendees)
- Mitochondrial and STR DNA Analysis by Mass Spectrometry Workshop
Technology demonstrations and sharing of reports and information is a crucial part of the FTCoE project. Professionals in the field rely on the Center for accurate and timely information to help in assisting process improvement and equipment selection.

NFSTC presented two posters at the American Academy of Forensic Science in 2009 entitled, *The Benefit of Using the QIAGEN MinElute® PCR Purification Kit for Post-PCR Cleanup on Low-Level DNA Samples* and *The Evaluation of Eight Commercially Available STR Kits*. These reports were well-received and updated information has been added and provided online.

NFSTC traveled around the country to present and demonstrate technology at national and regional meetings and conferences nationwide, including:

- American Academy of Forensic Sciences
- International Association for Identification
- Applied Technologies Conference
- American Society of Crime Laboratory Directors
- Force Protection Equipment Demonstration
- Special Operations Forces Industry Conference
- NIJ Conference
- National Sheriff’s Association
- International Association of Chiefs of Police
- International Association of Coroners and Medical Examiners
- National Association of Medical Examiners
- Biometrics Technology Consortium

DNA/GPA

Quality work at our nation’s public crime laboratories is critical to community safety and delivery of justice, and the Audit/Assessment program at NFSTC serves to support this. The longest-running and most widely known project at NFSTC, the DNA Audit program visits and reviews publicly funded DNA laboratories against the Federal Bureau of Investigation (FBI) Quality Assurance Standards as approved by the National DNA Index System (NDIS). These audits are provided at no cost to the laboratories and must be completed every two years. In 2009, NFSTC audited 42 public DNA labs across the country to ensure FBI lab standards are being met.

In addition, through the Grant Progress Assessment (GPA) program, NFSTC reviews all open NIJ grants every two years. NFSTC reported on the progress of 212 grants across the country in 2009.
Training

Nearly 200 professionals received hands-on training at our Largo facility in areas of forensics such as fingerprints, tenprint, footwear and tire track, evidence collection, laboratory auditing, biological screening, technology transition and DNA analysis and statistics. NFSTC brought more than 1,200 people from around the country to Pinellas County for training events of various types. Individuals from law enforcement, crime labs, medical examiner/coroner offices and other institutions attended classes, symposia and workshops at no cost to themselves or their agencies.

DNA Analysts:
- Louisiana State Police – 4 (DNA)
- Michigan State Police – 10 (DNA)
- DNA Analysts in the DNA Auditor training, Phoenix PD – 20
- DNA Analysts in Statistics for DNA Analysts training, Tucson PD – 9
- Georgia Bureau of Investigation – 6 (DNA)

Onsite at NFSTC
- Latent Print – 33
- SOCOM – 48
- Tenprint – 17
- Footwear/Tiretrack – 20
- Biological Screening – 45

Symposia and Conferences
- Trace Evidence Symposium, August 2009 – 300
- Post-Conviction Symposium, January 2009 – 286
- Grantees Meeting, October 2009 – 125
- Homicide Investigation Conference, July 2009 – 325

Specialty Training

Sensitive Site Exploitation (SSE) training consists of a 40- to 80-hour intensive techniques course to prepare warfighters for intelligence gathering opportunities. In 2009, four classes of soldiers were trained to gain proficiency and hands-on experience. In addition to acquiring investigative techniques, trainees gained best practices for identifying, handling and collecting items of evidentiary value. Service members learned to recognize the intelligence value of evidence as well as gained an understanding of basic forensic analysis.

NFSTC held a two-week training event for USF-St. Petersburg ROTC cadets in summer 2009. Training included fingerprint examination, tire tracks, and footwear impressions, as well as explosives detection, chemical analysis, media exploitation, IED investigation and deployable forensic laboratories and capabilities. Prerequisite material was delivered via podcast and hands-on activities at NFSTC laboratories and facilities.

Those students with an aim to serve in the Military Police, Military Intelligence or Chemical Corps are prepared for many things they may face in the field or a hostile zone, regardless of their field of expertise. Knowledge of forensics and biometrics trains a better rounded, more aware and prepared officer. The event was so successful that NFSTC will be offering it again in 2010, as a donated public service.

Free online learning in a number of forensic disciplines continues to benefit analysts and investigators across the country. Training and travel continues to be an expensive proposition for many agencies, resulting in cutbacks that can hurt the quality and consistency of forensic services. NFSTC makes a wide variety of training programs and symposia available online at no charge and continues to add new opportunities. These events are videotaped, allowing presentations and materials to be accessible to anyone wishing to learn the material. In-house production equipment and facilities at NFSTC are used to produce these web trainings. By providing top-quality content and instruction, professionals who may be otherwise unable to attend training due to budget or manpower cuts can keep up with and improve their skills and knowledge.
Deployable Forensic Laboratory

NFSTC’s deployable forensic laboratory provides moveable, flexible laboratory space that can supplement existing crime analysis capabilities, or replace them when necessary, in an innovative and efficient way. Developed in partnership with the Department of Defense and the Defense Threat Reduction Agency (DTRA), NFSTC deployable laboratories can make a critical difference to local or national forces when needed.

In 2009, Michigan State Police required temporary facilities while they wait for new laboratory space to be renovated. Two of NFSTC’s deployable units were available and on-site in a matter of weeks, allowing criminal investigative work to continue.

The deployable labs have also been used in training for warfighters in Afghanistan. The soldiers spent two weeks on-site training in a wide variety of forensic skills and headed back to the field. Two of NFSTC’s mobile laboratories were not only used in the training, but packed up with ruggedized and portable forensic equipment and shipped to Afghanistan for forensic support in theater.

Experience in various types of environments has lead to improvements in the laboratory design. Newer models are being equipped with integrated lighting and electricity, partial hydraulic set-up mechanisms, improved thermal control options and other updates.

NFSTC was honored with the prestigious August Vollmer Excellence in Forensic Science Award for contributions to forensic science by the International Association of Chiefs of Police (IACP) for this program.
NamUs

NamUs.gov is the one place where everyone interested in solving missing and unidentified persons cases—law enforcement, medical examiners and coroners, victims advocates and families—can enter and share information to help solve these heartbreaking cases. Completed in January 2009, this National Institute of Justice program is an online, searchable system that provides access to a national database of records for missing and unidentified persons. The system reaches between different law enforcement professions and beyond state and municipality borders, and allows the general public to become actively involved.

2009 NamUs highlights

• More than 2,700 new cases were added, bringing the total number of cases to more than 9,000.
• In July, the system was enhanced to automatically cross-search missing persons records against unidentified persons records, providing side-by-side comparisons. Cases with similarities are automatically presented to the investigator.
• Forensic services, including anthropologists, odontologists and DNA services through the University of North Texas Center for Human Identification were added as free resources for law enforcement.
• Nearly 5,000 users had registered with the system by the end of the year, with more signing on daily.

NamUs Success Stories

Family Member of Missing Person Finds Loved One on NamUs

In August 9, 1987 Paula Beverly Davis went missing from Kansas City, Missouri. Her body was found in Montgomery County, Ohio only 14 hours after she was reported missing, but law enforcement was unable to identify the body. In October 2009, Davis’ sister, Stephanie Clack, was watching an episode of The Forgotten and saw a NamUs public service announcement. She went to NamUs.gov and searched the database. After looking at a number of records, she was able to identify her sister by descriptions of her unique tattoos—a unicorn and a red rose. She reached out to the investigator listed in NamUs with this information. The DNA family reference samples were taken and on December 11, 2009, Paula Davis was positively identified.

Missing Person Matched with Unidentified Remains

In July 2007 Luis Fernandez went missing in Omaha, NE. His family reported him missing in June 2008. Fernandez’s case was entered into NamUs in March 2009 after Officer Jim Shields of the Omaha Police Department learned about NamUs at a conference at the University of North Texas Center for Human Identification. On April 6, 2009, a civilian contacted Officer Shields and alerted him of a possible match between Luis Fernandez – MP #1768 and UP #1870. The Medical Examiner in Ringgold County, Iowa, began comparing dental records. DNA family reference samples were collected from Fernandez’s family members. On January 11, 2010, the UP in Iowa was positively identified as Luis Fernandez.

Looking ahead

The focus in 2010 will continue to be adding more cases to the system as well as reaching out to law enforcement agencies to help them understand the benefits of using it. Continued success through public and Law Enforcement awareness efforts will build the caseload and increase the probabilities of case resolution.

Award No. 2007-IJ-CX-K023 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice.
The NFSTC scenario-based training facilities were significantly enhanced in 2009 with the construction of mock crime scene and war scenarios, including an apartment, modular scenario rooms, island-style huts with wood and sand floors and even a cave that can be completely darkened for the most realistic exercises. These facilities can be set up to simulate a wide variety of scenes where forensic techniques can be practiced hands-on during training events.

Conference rooms, additional storage, field laboratory set-ups, shipping equipment and offices comprise the rest of the building. The 62,000 square foot warehouse allows for safe storage and configuration of deployable laboratories and the mobile firing range. In addition, it provides completely secure, weather independent, space for large-scale training events.

Facility Enhancements

Expansion of scenario-based training options
2009 Audited Financial Statement

NFSTC is committed to prudent and appropriate fiscal management, providing the best in forensic support, training and services for our communities across the country.

Income:  

<table>
<thead>
<tr>
<th>Source</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grant Income</td>
<td>$11,477,822</td>
<td>85%</td>
</tr>
<tr>
<td>Direct Federal Funding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract Income</td>
<td>$2,012,979</td>
<td>15%</td>
</tr>
<tr>
<td>Other Governmental &amp; Private Agencies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>$57,795</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$13,548,596</td>
<td>100%</td>
</tr>
</tbody>
</table>

Expenses:  

<table>
<thead>
<tr>
<th>Source</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIJ Cooperative Agreement</td>
<td>$9,664,005</td>
<td>70%</td>
</tr>
<tr>
<td>BJA Cooperative Agreement</td>
<td>$388,695</td>
<td>3%</td>
</tr>
<tr>
<td>EPA Cooperative Agreement</td>
<td>$95,501</td>
<td>1%</td>
</tr>
<tr>
<td>Other Programs</td>
<td>$1,582,611</td>
<td>11%</td>
</tr>
<tr>
<td>Supporting Services</td>
<td>$2,085,588</td>
<td>15%</td>
</tr>
<tr>
<td>Total</td>
<td>$13,816,400</td>
<td>100%</td>
</tr>
</tbody>
</table>

A copy of IRS Form 990 can be found on our Web site. For further information, please contact us at info@nfstc.org or (727) 549-6067.

Quality Work, Competitive Spirit

NFSTC is proud to have competed and been awarded new opportunities to provide training and ongoing service. Among our awards announced in 2009:

FY09 Bureau of Justice Assistance (Award #2009-D1-BX-K028)

- NFSTC Infrastructure
- Tactical Crime Scene Training
- Biological Screening Workshops
- Digital Forensic Triage Training
- BJA Conference
- Medical Examiner Training

FY09 National Institute of Justice Training Awards

- Web-Based Crime Scene Investigation (Univ. of Tenn.) (Award #2009 - DN - BX - K190)
- Medical Examiner/Coroner Death Investigation Training (Award #2009 - DN - BX - K197)
- Pattern Evidence – Latent Print Training (Award #2009 - DN - BX - K198)
- Advancing Criminal Justice Policy, Practice, and Technology (Award #2009 - DN - BX - K223)
NFSTC Executive Management

Kevin Lothridge, Chief Executive Officer
David Epstein, Chief Operations Officer
Dave Sylvester, Chief Project Officer

Letter from the President

National Forensic Science Technology Center concluded another successful year with consistent commitment to providing vital assistance to the forensic science community.

As the designated Forensic Technology Center of Excellence, NFSTC continued to support initiatives of the National Institute of Justice (NIJ), practitioner training (see page 5), grant progress assessments and DNA laboratory audits, and technology evaluations and assistance. In addition, NFSTC hosted education conferences such as the DNA Grantee Summit, Trace Evidence Symposium and Post-Conviction DNA Training conference.

Among our newer projects, NFSTC provided support to the United States Department of Defense by providing training to support the military’s in-theater capabilities to deal with the forensic aspects of improvised explosive devices (IEDs), electronic warfare and other threats.

Our recently acquired 61,000+ square foot warehouse facility was enhanced to provide the ideal setting for realistic scenario-based training, including mock crime scenes, mock bomb and improvised explosive device manufacturing facilities, crime scene photography and other large scale hand-on opportunities. Providing this unique service keeps NFSTC on the cutting edge of industry training and technology transition.

We are committed to providing ongoing opportunities for the field to have access to the best in quality services. We look forward to an exciting future, knowing that our critical support services will benefit and improve crime laboratories, law enforcement, warfighters and the community at large.

Joseph Polski, President
An Accomplished and Growing Staff

At NFSTC, we are proud of our work and our team, which increased by 30% in 2009 to a total of 45 full-time staff members. Additionally, NFSTC services like the GPA/Audit program and NamUs created work opportunities across the country, with approximately 200 contractors contributing to our projects. Each member of our team is dedicated to serving the needs of our stakeholders, working together to achieve positive impact and delivering with quality and efficiency. As a functioning laboratory, safety is always top of mind and our OSHA report reflects zero staff injuries and days lost for 2009.

Recognition and Kudos

• A Tampa Bay Business Journal 2009 Best Place to Work
• Excellence in Technology Award for Innovation, presented by the Law Enforcement Information Management Section of the International Association of Chiefs of Police, for the National Missing and Unidentified Persons System (NamUs)
• Dennis Thureson, Finance Operations Manager, named a Finalist for CFO of the Year by the Tampa Bay Business Journal
• August Vollmer Excellence in Forensic Science Award for contributions to forensic science by the International Association of Chiefs of Police (IACP).
• Fifth Place, Ultimate Management Team, sponsored by the Tampa Bay Business Journal
• A Tampa Bay Business Journal 2009 Fast 50 Company
7881 114TH Avenue North
Largo, FL 33773
PH (727) 549-6067
FX (727) 549-6070
www.nfstc.org