The National Forensic Science Technology Center (NFSTC) is a 501(c) (3) corporation headquartered in Largo, Florida. Founded in 1995 by the American Society of Crime Laboratory Directors (ASCLD), the NFSTC quickly established itself as a leader in providing quality forensic services to the justice community (including public crime laboratories, medical examiners, law enforcement agencies, academic institutions, and other professional forensic science organizations).

In 2000, the NFSTC began a partnership with the Office of Justice Programs’ National Institute of Justice (NIJ), through a cooperative agreement. Since that time, funding has continued through cooperative agreements and competitively awarded support from the NIJ and other Federal agencies, enabling the NFSTC to develop and deliver valuable forensic training and technical assistance to the justice community. Among other services, this partnership provides training opportunities for forensic analysts who might not otherwise be able to access training due to their agencies’ budget constraints. The NFSTC collaborates with the forensic community to assess their needs, communicates the findings, and works closely with the justice community to provide essential goods and services delivered at little or no-cost to stakeholders.

In 2007, the NFSTC maintained a full-time staff of 28 employees with a complement of over 140 consultants and numerous subject matter experts who provided expertise in the various forensic disciplines. The NFSTC occupies a 23,000 square foot facility that includes administrative offices, training and meeting rooms, a sound-proof recording studio, an instructional design studio equipped with an assortment of multimedia formatting technologies, and a fully equipped, functional training laboratory.
On December 31, 2007, Dr. William J. Tilstone retired from the NFSTC, where he has served since the organization’s inception nearly twelve years ago. Appointed as Executive Director by the Board of Directors in 1996, Dr. Tilstone’s vision of providing services to the forensic science community was the primary company asset in those early days.

During the first four years, the NFSTC was able to generate sufficient revenue to grow to the point at which it was a significant provider of support to crime laboratories. By 2000, the NFSTC was comprised of seven employees when the Office of Justice Programs’ National Institute of Justice awarded a cooperative agreement to the NFSTC to fund their work for the forensic science community. The opportunity to provide needed services at no-cost to public crime laboratories that were unable to pay for services became a reality.

Over the next several years, Dr. Tilstone and his executive staff provided leadership that expanded the NFSTC focus, encompassing and affecting a broader scope of services for the forensic and justice communities. He stepped down as Executive Director in January 2005. However, Bill’s contribution continued in a key executive role and as the director of the training unit. Bill led the training team when the NFSTC was tasked with developing the President’s DNA Initiative’s DNA Analyst Training, among numerous other projects.

Throughout his career at the NFSTC, Bill has welcomed and relished the ability to work in an organization that offered the freedom to address issues in the forensic arena without restraint. Applying the principle of open-mindedness and the ability to consider new options to established issues spawned innovative ideas and effective solutions. When asked what he will miss most upon leaving the NFSTC, Bill said, “Friends, the buzz of tackling and solving problems and seeing the positive results.”

We are grateful for all that Dr. Tilstone has given to the forensic science community, to this organization, and to us as individuals.
Our **VISION** is 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** is that 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.

**Consistent Mission Unchanged**

For nearly thirteen years, the NFSTC has consistently focused attention and project deliverables on the needs of the forensic community, collaborating with members of the justice community to ensure that our programs and services support and enhance their ability to ensure the public safety.

The NFSTC has experienced considerable growth, particularly in recent years, all the while maintaining the core emphasis on the Science and targeting the needs of the forensic science community. The spectrum of our project work now spans across many forensic science disciplines and stakeholders.

**Built to Compete**

Having closed out two Cooperative Agreements with the National Institute of Justice (2000 and 2004), we have built a team of staff members to develop proposal responses to Federal solicitations for competitive funding in our areas of expertise, including Technical Assistance and Training.

In September 2007, we were honored when the Office of Justice Programs (OJP) named the NFSTC as the Forensic Technologies Center of Excellence. One of four technology centers newly created by the OJP, the NFSTC is the only center focused on OJP forensic research and development initiatives. This award is one of the competitively awarded funds for FY2007. Over 85% of total FY2007 funding has resulted from successfully submitted competitive proposals.

FY2007 competitively awarded funding supports the development and management of the missing persons database, which is part of the National Missing and Unidentified Persons System (NamUs) as well as Pattern Evidence training.

For the first time, the NFSTC sought and earned funding assistance from the Bureau of Justice Assistance (BJA). This support will fund three 2008 projects: Forensic Service Integration for Pathologists, Forensic Science and Cold Case Assistance for Cold Case Investigators, and Technology Integration Scholarships for the International Association of Forensic Science (IAFS) triennial meeting.
**Refining Our Strategy**

As growth has broadened our scope, we have adapted our methods accordingly. One of the challenges of managing the expansion that we have experienced over the past five years is to continue our social responsibility as a good corporate citizen by providing a stable work environment for our employees. In 2007, the NFSTC employed 28 full time staff and over the last five years, we have maintained an average retention rate of 97%. Key to our success in delivering this expanding menu of programs has been our ability to leverage our partnerships within the justice community to work with us as consultants and subject matter experts.

Another facet of adjusting to this wave of expansion has been the restructure of our organization by moving to a project-based functional model. Several positions were re-titled, including those of Chief Executive Officer and Chief Operations Officer. Working with a relatively small staff, we all function in multiple capacities across numerous projects, reaching program objectives through team based cooperation.

The NFSTC staff is comprised of scientists, former laboratory directors and law enforcement officers, training and technology experts, skilled communications and compliance personnel, as well as financial, human resource, and operations staff.

To diversify the NFSTC funding base, we have developed fee-for-service training programs. Thus far, these programs have focused on Biology and DNA Analysis training provided to State laboratory systems that have undergone significant hiring phases. This program builds upon the experience and academic foundation of previous on-site DNA academies delivered by the NFSTC.

Class sizes range from 4 to 30 students and are delivered either on-site at the agency’s facility or at the NFSTC laboratory.
Membership Corporation

The NFSTC corporate structure is that of a membership corporation. The members of the Board of Directors are elected by representatives of those member organizations at the annual members’ meeting. Board members are elected for a three year term, may serve no more than two consecutive terms, and may or may not be associated with a membership organization.

Board of Directors

The principal goal of the NFSTC Board is to provide management and policy guidance to the company and to further the goals and business purposes of the NFSTC. The Board of Directors meets four times during the year, providing overall policy guidance to the NFSTC. The Board reviews the current and future activities of the NFSTC and makes strategic decisions regarding corporate direction. Most often, board meetings are held at the NFSTC facility in Largo, Florida. However, meetings may be held in conjunction with forensic events, such as the International Association of Forensic Sciences meeting, or at other venues that are attended by the Board members. Photographs of the Board members elected for the May 2006 – 2007 term and their affiliate organizations are shown on the next page.

Finance-Audit Committee

An important component of the Board of Directors is the Finance-Audit Committee (FAC), which was formed as a direct result of the Sorbanes-Oxley legislation related to corporate board organization and responsibilities. Although not yet legally applicable to non-profit organizations such as the NFSTC, the board felt it prudent to establish the FAC to accomplish a quarterly review of the corporation’s financial documents and to review any appropriate internal matters. In addition, the FAC engages an audit firm to perform the annual formal audit of all NFSTC finances.
2007 - 2008 Board of Directors

- Marie Samples
- Karolyn Tentarski, Secretary
- J.C. Upshaw Downs
- Joseph Polski, President
- Frank Dolejsi
- Don Wyckoff, Treasurer
- Benny DelRe
- Karl Kusmierz
- Carl Selvaka
External DNA Audits and Grant Progress Assessments

The Audit/Assessment program is the longest running and most well known program performed through the NFSTC. What began as an External DNA Audit program in 2002 was expanded in 2005 by the National Institute of Justice (NIJ) to include Grant Progress Assessments to assist the NIJ in its oversight role of grant recipients.

Over the duration of the Audit/Assessment program, members of the NFSTC Assessment team have conducted a total of 385 external DNA audits and 872 grant assessments; program assessors have visited 562 individual agencies or laboratories. In 2007 alone, 41 individual DNA audit reports and 381 grant assessment reports were generated.

In recognition of the substantial growth and success of the Audit and Assessment programs, the National Institute of Justice has specified these programs as elements funded under the NFSTC’s designation as the Forensic Technologies Center of Excellence.

Audits

The goal of the performance of DNA Audits is to provide external DNA Audits for forensic DNA laboratories using the Federal Bureau of Investigation (FBI) standards checklist for quality assurance as approved by the National DNA Index System (NDIS). These external audits are provided at no-cost to forensic DNA laboratories and are performed every two years.

"You perform a remarkable service that is invaluable. Not only does it provide an objective assessment from an outsider's vantage point to document we are adhering to the highest standards in forensic [DNA] testing, it also helps us improve how we run our operation. We appreciate how much work you put in before, during and after these inspections."

Assessments

As an extension of the DNA Quality Standards activities, the NIJ established the Grant Progress Assessment Program (GPA) at the NFSTC in an effort to respond to the growing number of grant awards and to meet the needs of grantees. Through the GPA Program, NIJ assesses 100% of all grants within a two year cycle. Beginning in January 2005, the NFSTC began to conduct grant assessments of recipients of DNA funding awards. These grant assessments are conducted simultaneously with the external DNA audit for those laboratories choosing to receive the no-cost audit. For those laboratories receiving DNA funding, but choosing not to participate in the no-cost external audit program, grant assessments are conducted on a biennial basis per an NIJ mandate.

In September of 2006, the NIJ further requested an expansion of this program to include funding related to the Paul Coverdell National Forensic Science Improvement Act Grant Program and the Solving Cold Cases with DNA Grant Program. The addition of these grant programs resulted in an exponential growth in the number of grant assessments conducted by NFSTC personnel. All grant assessments and no-cost DNA audits are provided utilizing funding from the NFSTC Forensic Technologies Center of Excellence cooperative agreement with the NIJ.
DNA Analyst Training

The year 2007 marked the completion of the development of the DNA Analyst Training program under the President’s DNA Initiative (PDI). This program is a technology-based training (TBT) resource designed to assist publicly funded crime laboratories in conducting forensic DNA analyst training. The self-paced multimedia content uses the experience and academic foundation of previous on-site DNA academies delivered by the NFSTC.

Launched in 2004, the NIJ approved the successful conclusion of the DNA Analyst Training curriculum development and training on October 19, 2007. Comprised of eleven major subject areas presented in modular units of instruction, the online training was released in December 2007.

http://dna.gov/audiences/forensic

The theoretical knowledge base is paired with resources designed for laboratory implementation of analysis methods. Under this Cooperative Agreement (2004-DN-BX-0079), the NFSTC also provided forensic DNA training to 809 practitioners in 43 states, surpassing the original proposed number of trainees (144) by providing training to 665 additional participants. Ongoing DNA Analyst Pilot Training with the Arizona Department of Public Safety and the Wisconsin Department of Justice State Crime Laboratory is reflected in those numbers. Pilot training is scheduled for completion in June 2008.
Field Investigation Drug Officer

Created to aide the criminal justice system by decreasing the overwhelming controlled substance caseload, the initial development of the Field Investigator Drug Officer (FIDO) program is complete. Based on the evaluation of an existing model operated by the Phoenix Police Department, the effective implementation of the FIDO program affords certified law enforcement officers the capability of providing a preliminary identification of the most commonly encountered drugs of abuse.

Benefits of the effective implementation of a FIDO program include:
- Immediate on-scene investigative information
- Facilitation of adjudication in the preliminary phase of possession and non-residue cases
- Reduction of laboratory case backlog

To provide the opportunity for law enforcement agencies to implement this program in their respective jurisdictions, agencies in Utah, Oregon, and Pennsylvania volunteered to participate in a pilot program in 2006 and began their six month evaluations during 2007.

The NFSTC presented the findings of the pilot program conducted by the Utah Bureau of Forensic Services (BFS) at the 2007 American Society of Crime Laboratory Directors (ASCLD) poster presentation session. The BFS adapted the guidelines presented in the FIDO program to fit Utah’s specific needs. For example, the BFS developed a drug testing kit that included Sodium Nitroprusside, Scott’s, and Froehdes, which presumptively test for the presence of methamphetamine, cocaine, and heroin respectively. The BFS reported several benefits following the implementation of the FIDO program, including a reduction in the number of laboratory submissions; decreased analysis turnaround time due to overall caseload reduction and the subsequent ability to redirect resources into other laboratory sections; and an improvement in the overall relationship between the laboratory and law enforcement.

The NIJ has asked the NFSTC to solicit statistical data and information from the pilot sites, including the Phoenix Police Department, which was the original concept site. This data will be compiled and presented to the NIJ for further evaluation.
Firearms Analyst Training

Funded by the National Institute of Justice (NIJ), the National Forensic Science Technology Center (NFSTC) partnered with the Association of Firearm and Tool Mark Examiners (AFTE) to produce a technology based Firearm and Toolmark Examiner Training program. The NFSTC is pleased to announce that this program was completed in 2007 and approved by the Assistant U.S. Attorney General for release on May 10, 2008 and is currently available online at:

http://www.ojp.usdoj.gov/nij/training/firearms-training

This no-cost program is designed for the training of newly hired analysts, though the modular format also lends itself well to the continuing education of current examiners. The program was designed to parallel the existing AFTE training and procedural manuals.

Each module consists of theoretical content written by subject matter experts supplemented with photographs, graphics, animations, and video sequences to support effective learning.

A technical review committee consisting of AFTE subject matter experts, instructional designers, and technical editors worked with the NFSTC to ensure scientific accuracy, consistency, and adherence to andragogical principles. To ensure quality and effectiveness of the program, a panel of three experts (AFTE members) was appointed by AFTE to review each module.

Covered topics include:

- History of firearm identification
- Development of modern firearms and ammunition
- Examination of firearms, ammunition, and toolmarks
- Gunshot residue and distance determination
- Effective written and oral presentation

Several resources are also provided, including a safety module, sample worksheets and reports, assessments for each module, and quality assurance information. The training is also easily transformed for independent use in other environments, such as crime scene training and continuing education for existing firearms examiners.
The National Institute of Justice (NIJ) funded the National Forensic Science Technology Center to facilitate the transition of five emerging technologies with forensic applications from research to practice.

The training sessions provided instruction and presentation of research data for:

- Liquid chromatography with tandem mass spectrometry (LC-MS\MS) for toxicological analysis
- Cedar Fox questioned document software for handwriting analysis
- Laser microdissection for biological applications (separate sessions were held for analysts and managers)
- Capillary electrophoresis for clandestine methamphetamine analysis
- Polynomial texture mapping for footwear and tire impression examinations

The objective of each two-day training session was to provide attendees with an overview of the theoretical and practical applications of the emerging technology.

The essential elements of this model developed by the NFSTC are as follows:

- Current instructional design methods were applied during the curriculum design phase
- Each training session was provided via traditional classroom and laboratory delivery to 12 – 16 practitioners
- Lecture components of the sessions were electronically captured and formatted for web-based delivery
- Videotaped demonstrations of practical components (where applicable) were captured and formatted for web-based delivery
- Lecture components, video demonstrations, and supplementary materials were disseminated via web-based portal delivery

This novel format provides a model for the transition of emerging technologies with forensic applications from research to practice. It is anticipated that this format will be used as a model by both the NFSTC and the NIJ to facilitate future technical transition training. This blended transition and training format effectively bridges the gap between researcher and forensic practitioner.
Deployable Forensic Laboratory

During the summer of 2006, the NFSTC began a partnership with the Department of Defense (DOD) and the Defense Threat Reduction Agency (DTRA) to develop a readily deployable forensic laboratory. This concept builds upon a similar laboratory structure employed in the exploitation of Improvised Explosive Devices (IED) and is being modified to expand the availability and portability of forensic analysis capabilities in the United States and internationally.

**Deployable — Mobile — Modular**

The mobile laboratory will provide an at-the-ready setup that can be used to expand the capabilities of the warfighter in gathering various types of forensic intelligence. Domestically, these laboratories can be deployed in response to a natural disaster or an accidental incident and as a force multiplier to support existing forensic operations. The deployable forensic laboratory could provide a rapid response to an urgent need or could be deployed anywhere in the United States to supplement a functional laboratory in an effort to reduce case backlogs.

**Satellite Communications**

Comprised of four shelter structures that are attached to form a single unit, the individual shelters measure 8’ by 20’ by 8 ½’ and can be transported via highway, rail, ship, or air. Delivery to isolated areas is possible under suitable helicopters. The expandable sections are self-supporting and can be set up on virtually any terrain or for use while mounted on a truck or trailer. When the four-shelter laboratory is opened and attached, it affords approximately 1600 square feet of laboratory space. Full setup of the laboratory can be accomplished in less than one hour. The laboratory is dust and light proof with self-contained power and air conditioning and is capable of sustaining power for a minimum of 33 hours on a single tank of diesel fuel.

**Reachback Capability**

The design, planning, procurement, and development phases of the deployable mobile laboratory project continued through the balance of 2006 and into 2007. Considerable progress was made in moving from concept to implementation upon delivery of the first two structures in November 2007. Delivery of the third and fourth structures in January 2008 moves the project into the pilot stage.

A laboratory structure will be on display in 2008 at a number of conferences including, AAFS, the NIJ Applied Technologies Conference, IACP, and the Technologies for Critical Incident Preparedness Conference. This project has received additional funding support for 2008 that will provide for the addition of two more structures as well as an 8’ x 53’ deployable mobile firing range.
National Missing and Unidentified Persons System (NamUs)

Under a partnership with the National Institute of Justice (NIJ), which is the Office of Justice Program’s research, development, and evaluation component, the NFSTC has been tasked with the development and management of a missing persons database. NamUs was motivated by an overwhelming need for a central reporting system for unidentified remains cases; the vast majority of unidentified decedent cases are currently inaccessible for law enforcement investigative purposes and unavailable to the general public. Developed by the NIJ, NamUs will serve as a national repository for information on unidentified remains, missing persons, and related national and state resources. It will be designed to facilitate the work of a diverse community of individuals and organizations who investigate missing and unidentified persons.

The project began in the fall of 2007 and is part of the National Missing and Unidentified Persons System (NamUs), which is designed to provide the nation's medical examiners, coroners, victim advocates, law enforcement agencies, missing person clearinghouses, and the general public with the ability to simultaneously search online for the records of missing persons and unidentified human remains in an effort to solve cases.

Users will be able to access both the Unidentified Decedent database, which is currently accessible (www.namus.gov), and the missing persons database. Ultimately, NamUs will link records from the unidentified remains database with missing persons records through a search and matching tool. Individuals will be able to search the NamUs database using characteristics such as demographics, anthropologic assessments, dental information, and distinct body features.

During the last quarter of 2007, a NamUs working group, comprised of participants from across the country, was formed. The first meeting of the working group was held in December 2007.

Key project development areas and goals were identified under the following categories:

- Report Intake
- Report Validation
- Resources, Training, and Outreach
- Information Sharing and Systems Integration
Cold Case Training ~ Trace Evidence Symposium

Cold Case Training Sessions

A series of regional Cold Case conferences were held at both Basic and Advanced levels with the following goals:

• To educate attending law enforcement officers on strategies used to solve cold cases
• To identify the resources available from the Federal government to support their mission
• To provide information from model Cold Case Units on how to prioritize cases, conduct cold case interviews, leverage forensic technology, and gain support from local legislators

The NFSTC, on behalf of the National Institute of Justice hosted the following events during 2007:

• Basic Cold Case Training Conference (June) in Clearwater, FL for approximately 125 participants and in Scottsdale, AZ (September) for approximately 111 investigators
• Advanced Cold Case Training Conference (June) in Indian Rocks Beach, FL for approximately 95 participants and in San Diego, CA (December) for approximately 125 participants

Trace Evidence Symposium

Trace evidence is a diverse forensic discipline that includes the analysis of paint, glass, hair, fibers, particulate matter, botanicals, arson/fire debris, explosives, and impression evidence, among others. To provide laboratory administrators, policymakers, and other relevant stakeholders with a valuable opportunity to network and share information about their work, the challenges they face and the solutions applied to these challenges, the National Institute of Justice (NIJ) and the Federal Bureau of Investigation (FBI) co-sponsored the Trace Evidence Symposium in Clearwater, FL on August 13—16, 2007.

The conference included educational workshops, plenary sessions, and case presentations to a total of 330 attendees, including 46 international participants. The NFSTC brought extensive meeting planning and delivery experience to bear, ensuring the success of the symposium.
Community Outreach

The NFSTC Community Outreach program is accomplished through the following methods:

- Inform interested parties about the NFSTC programs
- Gain Input from the forensic science and law enforcement communities to assist in targeting programs and services to fit their needs
- Support other organizations that support forensic science service delivery

The programs developed and delivered by the NFSTC on behalf of the National Institute of Justice (NIJ) are offered to the justice community for little or no-cost. Getting this message out is a critical function of the NFSTC Community Outreach effort.

Communication with the justice community is accomplished by the NFSTC primarily through participation in professional organization conferences where program information is disseminated through newsletters, handouts, and face-to-face interaction with our stakeholders. Poster presentations offer the opportunity to share more in-depth information about a particular program.

During 2007, the NFSTC attended numerous conferences, including the American Academy of Forensic Sciences (AAFS), the Association of Firearm and Tool Mark Examiners (AFTE), the International Association for Identification (IAI), the American Society of Crime Laboratory Directors (ASCLD), the International Association of Chiefs of Police (IACP), and the Association of Forensic Quality Assurance Managers (AFQAM), as well as regional professional organization meetings.

The NFSTC facilities are available for use by the justice community for meetings and conferences, as well as training events. A fully functional laboratory and instrumentation are also accessible to NFSTC stakeholders.
NFSTC Staff

- Successful Cooperation
- Stakeholder Focus
- Collaboration
- Project Teams
- Constructive Partnerships
- Results-Oriented
- Rapid Response
- Expertise
- Mission Driven