FIVE-YEAR PROGRAM REVIEW

Forensic Science Program

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I. Forensic Science Program Overview

Marshall University's Forensic Science Program, approved in 1994 by the Board of Trustees, is one of only 15 programs in the nation to offer a Master's level degree in forensic science. The MS degree provides graduates with opportunities to attain upper and middle management positions as Technical Leaders in laboratory settings not available to baccalaureate degree graduates. The Program is a member of the Joan C. Edwards School of Medicine and the MU Graduate College. While a limited number of PhD programs exist, the master’s degree continues to be the terminal degree in the field of forensic science. The Program’s website [http://forensics.marshall.edu] overviews a comprehensive educational program addressing DNA technologies, bioterrorism, crime scene and death investigation, toxicology, forensic chemistry, fingerprinting, ballistics, arson, explosives, digital image processing, microscopy, trace evidence, cybercrime and legal issues. The core curriculum meets both the requirements of the DNA Advisory Board (DAB) for forensic DNA analysts and the recommended curriculum of the Technical Working Group in Higher Education (TWGED) in Forensic Science. The Forensic Science Center is home to both the Master’s Degree Forensic Science Program and the West Virginia Combined DNA Index System (CODIS) Laboratory. Unique among forensic science graduate programs across the nation, the Forensic Science Program provides graduate assistants with on-site experience in the CODIS Laboratory which performs DNA analysis on convicted felons, as well as DNA-based paternity testing (Appendix 1.1 MU Forensic Science Center Vision, Mission, Academic Program, CODIS, Economic Development, Research, Projects; PCR and Analytical Chemistry Laboratories & Regional Education and Training Center; Parentage Testing Services). The Summer Internship Program allows students to make valuable contacts and gain valuable experience with select forensic laboratories and law enforcement agencies. Pending course approval, the curriculum continues to evolve through the development of a Forensic Chemistry Emphasis which meets Drug Enforcement Agency (DEA) requirements for forensic chemists as well. Courses in cybercrime and bioterrorism reflect the Program's imperative to address future educational needs of graduates entering newly developing fields of forensic science.

The involvement of the Center in a variety of initiatives provides students with a vast exposure to forensic science topics and experiences outside the
classroom. Research and development is an integral part of the Forensic Science student experience. Program-associated research projects include 1) mitochondrial DNA research to assist in the development of a FBI database for missing children, 2) the study of smokeless powders to assist federal agencies in individualizing identification to establish sources/distribution networks, 3) DNA-based bacterial source tracking to rapidly identify sources of bacterial contamination in water and the environment and its application to the newly developing field of microbial forensics and bioterrorism preparedness research (Appendix 1.2 The Potomac River Project), and 4) the study of pollen indigenous to West Virginia using scanning electron microscopy for the purpose of forensic anthropological characterization. In addition, the Forensic Science Center is a member of NIJ’s Forensic Resource Network (FRN) which supports national initiatives throughout the forensic community through training, technology transfer, research and development, testing, evaluation and analytical services (Appendix 1.3 National Institute of Justice Forensic Resource Network). Faculty, staff and students are involved in the development of Sexual Assault Nurse Examiners (SANE) planning and training (Appendix 1.4 Sexual Assault Response Training). The School Bus Security Project is a Forensic Science Center cooperative effort with the Rahall Transportation Institute and Cabell County School Systems to create security features for a prototype school bus to prevent intrusion and sabotage (Appendix 1.5 School Bus Security Project). The First Responders DNA Pilot Project proposes to provide DNA profiling services to West Virginia firefighters and EMS workers throughout the state (Appendix 1.6 First Responders DNA Pilot Project). The dynamic nature of the Forensic Science Program continues to draw a geographically diverse student population that supports the high admissions and academic standards of the Program. Typically, one quarter of in-coming students are West Virginia residents. Speakers from the FBI, DEA, Medical Examiner’s Office, West Virginia State Police, Fire Marshal’s Office and other forensic specialists are frequent guests of the Forensic Science Program each year through on-site seminars and distance learning formats. In addition, students participate in a community service activity through their presentation of timely seminar topics which are transmitted via distance learning technology to criminalists at the West Virginia State Police Laboratory.

II. Accreditation Information

Until recently, no professional body had assumed responsibility for national accreditation of educational programs in the forensic sciences. In May 2003, pilot accreditation guidelines were published by the American Academy of Forensic Sciences (AAFS) as may be seen at http://aafs.org. The MU Forensic Science Program will be seeking national accreditation within the next Program Review evaluation cycle.
III. Program Statement

A. Adequacy

1. Curriculum: A summarized assessment plan for assessing curriculum outcomes is provided (Appendix 2.1 Assessment Plan of Curriculum Outcomes). The Forensic Science Program at Marshall University is a two year curriculum that consists of 4 semesters and a summer term. The required and elective course work in the Program is provided in Appendix 2.2. Summer months are devoted to a required student internship which may be performed either on- or off-site. On-site summer internships are available in the following MU laboratories: WV CODIS, Forensic Microscopy, Forensic Chemistry and Microbial Forensics. In-state, off-site summer internships are available through the State Police, Medical Examiners Office, and the Fire Marshal's Office. Out-of-state internships are obtained through participating law enforcement laboratories and agencies throughout the country. A list of past internship sponsors is provided in Appendix 4.8. The course offerings and areas of concentration have evolved since the last review. Course revisions, expansion of single courses into one or more courses, and development and implementation of new courses reflects the maturation process, as well as response to state and national needs. Approved and proposed curricular changes have arisen as a result of efforts to include homeland security and cybercrime topics, a forensic chemistry emphasis, as well as to incorporate technological advances currently in use in the forensic laboratory. Another impetus for evaluation and re-focusing parts of the curriculum has been the development of a national guide for higher education in forensic science. The Technical Working Group for Higher Education in Forensic Science (TWGED Document) was developed over a year ago through the assembling of educators, university administrators, lawyers and end-users for a series of national meetings. The final document appears at the American Academy of Forensic Science Web Site at http://aafs.org. It should be noted that the current MU curriculum satisfies all TWGED course core competencies, as well as an internship recommended by the guide document. In the future, accreditation audits of forensic science programs will be available through the Academy. The goal of the MU Forensic Science Program is to achieve accreditation within the next Program Review cycle.

The courses in the Forensic Science Program have evolved and changes have been instituted to better represent, present and organize subject matter. For example, lectures formally presented in Multiple Topics in Forensic Science, later renamed as Forensic Science
Technologies (FSC 614), were reorganized into two courses, i.e. Forensic Comparative Science (FSC 618) and Forensic Analytical Methods (FSC 622). In addition, new courses in Cybercrime (FSC 609) and Bioterrorism (FSC 610) have been developed and taught as electives. Both of these courses address the need for coursework in the area of homeland security and, in the case of cybercrime information, security for law enforcement and corporate America. All courses are routinely evaluated and fine tuned to reflect current ideas, issues and technological advancements in the field. Furthermore, changes and modifications of the curriculum support the mission of the MU Forensic Science Program to educate future generations of forensic scientists at the Master’s degree level and to create human resources to promote law enforcement and economic development in the state and at the national level. Through a Memorandum of Understanding, the MU Forensic Science Center provides education and training to members of the West Virginia State Police Crime Laboratory.

In addition, MU Forensic Science Center is one of four founding members of the Forensic Resource Network (FRN) with a formal role and obligation to provide education and training to forensic laboratory personnel on a national level. Training modules have been, and continue to be, developed to accommodate this mandate. As a member of the FRN, the MU Forensic Science Program is kept abreast of disciplines and topic areas that need further development within the academic program.

2. Faculty: A summarized assessment plan for assessing faculty outcomes is provided in Appendix 3.1. Three full time and one three-quarter time faculty members are specifically designated to teach in the Forensic Science Program. Adjunct faculty participating in the program serve voluntarily with and without financial compensation. Faculty data for the past five years is included in the appendices (Appendix 3.2 Faculty Data Sheets) with current curriculum vitae on file. Dr. Fenger receives his salary, in part, through a 12-month university faculty appointment as the Chair of the Department of Microbiology, Immunology and Molecular Genetics. The remaining portion of his salary is paid through a federal grant for his role as Director of the WV CODIS Laboratory. Two full-time faculty, Drs. Fenger and Rankin, are tenured. Dr. Fenger is tenured through the Joan C. Edwards School of Medicine Department of Microbiology and Dr. Rankin is tenured through the University. Dr. Staton, who joined the program in January 2003, is on a tenure track. Catherine Rushton’s appointment is part-time and therefore not a tenure track appointment. Dr. Rankin is on a 9-month faculty appointment with his
summer salary provided by indirect costs from a federal grant. Dr. Staton is a 12-month faculty appointment with her summer salary provided by a federal grant. Ms. Rushton’s entire salary is derived from a federal grant. Within the Program, each faculty member is responsible for organizing and providing instruction for courses. Laboratory courses, segments of lecture courses with laboratory components and internships depend on the combined efforts of the forensic science program faculty and WV CODIS staff. Courses and instructors are evaluated using a standardized course/faculty evaluation form (Appendix 3.3 Summary of Course/Instructor Evaluations). The administration and compilation of faculty/course evaluations is performed by the Program’s administrative secretary to assure evaluator anonymity. These evaluations are used to make faculty/course improvements throughout the year. In addition to teaching assignments, research is a significant responsibility of each faculty member. Dr. Fenger is the primary investigator on the Crime Laboratory Improvement Project Grant funded by the National Institute of Justice, is a co-investigator on a USDA grant for 2002-2004 and a WVDA grant from 1998-2004. Dr. Staton is a co-investigator on the 2003-2004 USDA and WVDA grants as well as directing a staff of 5 research technicians and a graduate assistant. In addition, Dr. Staton serves as coordinator for the Forensic Science Seminar Series, the Program’s curriculum, and program reviews. She also serves as the academic advisor for forensic science students, as well as volunteering as the faculty advisor for the forensic science student organization (MUFIA). Dr. Rankin is the recipient of a WV Promise Grant and the Army Corps of Engineers Grant in 1998 with a National Institute of Justice Grant pending. Faculty member demonstrate their commitment to public and professional service by giving presentations at the local, regional, state and national level. Full-time faculty in the Forensic Science Program possess PhD’s., attend at least one national meeting in their respective disciplines annually and serve on the Forensic Science Graduate Committee. In addition, each faculty directs graduate assistants, work study students and interns as well as participating in the forensic science seminar series (FSC 680).

3. Students

a. **Entrance Standards.** Through a selective admissions process, the Forensic Science Program accepts a maximum of 15 new students per year. A list of this year’s applicants by number of letters of reference, GRE, GPA, undergraduate institution and undergraduate major is provided to demonstrate the quality and caliber of students making application to this Program (Appendix 4.2 Sample of 2003 Program Applicants). Students
are rank-ordered according to their 1) undergraduate GPA, 2) GRE scores, 3) letters of reference used in lieu of a formal background check and 4) a cover letter which acts as a writing sample (Appendix 4.3 Graduate Catalog Program Application Procedures). Procedures for applying to the Forensic Science Program are published in the MU Graduate Catalog at http://marshall.edu/www.gradcat and on the Forensic Science Website at http://forensics.marshall.edu. Qualified applicants are reviewed for admission by the Forensic Science Graduate Committee consisting of the Program Director, Forensic Science Faculty, a College of Science member and the Dean of the Graduate College. The Vice President for Research and Biomedical Science Associate Dean participates as a non-voting member. Applicants who meet Program entrance requirements are initially rank-ordered based on their GRE scores and undergraduate GPA. In general, letters of recommendation and students’ personal statements must be deemed acceptable by the Graduate Committee for applicant acceptance into the program. Beyond that, the specific content of referral letters and student writing samples are evaluated when applicants are equivalent in GRE/GPA.

b. **Entrance Abilities.** The average class undergraduate GPA and GRE during the current review period was 3.5 and 1527, respectively (Appendix 4.4 G & H). Receipt of a large number of applicants has been typical in past years (Appendix 4.4 A). From this list of applicants, 50-70% can be predicted to meet minimal admissions standards and formally complete the application process. The vast majority of applicants have undergraduate degrees in chemistry, biology or other natural sciences (Appendix 4.2). Upon entry into the Program, students are required to maintain a 3.0 GPA, in addition to meeting other criteria established by the Graduate College. Student attrition has not been a significant problem for the Program due primarily to the high academic standards required for admission, as well as the high motivation and sincere desire of students to become forensic scientists with a graduate-level education (Appendix 4.4 C, D & E).

c. **Exit Abilities.** Summer internships provide students with reality-based professional experiences. Internships provide students with an opportunity to gain valuable insight into an agency as well as to demonstrate their academic and professional skills to a perspective employer. Supervisor evaluations of students during their 10-week internship with law enforcement and other forensic science agencies are provided
in Appendix 4.5. In the final term of the Program, students are expected to demonstrate competency in 5 major areas of their educational program by achieving a grade of B or higher on the subsections of the Forensic Science Comprehensive Examination. Students who fail to achieve an acceptable score in any one of these areas are required to re-test in that or those areas the following term. Students are permitted to re-test a maximum of 2 times on the Comprehensive Examination prior to dismissal from the Program. The percentage of students passing the Comprehensive Examination by year is provided in Appendix 4.4 I. On average, classes exit the Program with a 3.5 GPA (Appendix 4.4 J), a high rate of employability (Appendix 4.4 F) in the forensic science field, and a master’s degree enabling them to achieve vertical career mobility as technical leaders in forensic laboratories. A list of graduate employers was obtained through the Forensic Science Alumni Survey (Appendix 4.6). In 2003, the Program surveyed employers who viewed graduate employees to have appropriate organizational skills (100%), laboratory abilities (92%), writing skills (100%), ability to apply new knowledge (100%), interpersonal skills (93%), and communication, to include presentation, skills (100%) as seen in Appendix 4.7.

4. Resources

a. Financial. Most students have graduate assistantships and/or work study positions derived from a variety of funding sources. Financial support for the Forensic Science Program is also derived from various sources. In 2002, the Office of the President showed its support by allocating equipment funds in the order of $200,000. With respect to salaries, two faculty members are paid over 12-months and one for 9-months on university salary lines. The part-time faculty salary and 9-month faculty supplemental summer contracts are currently paid through extramural funding. Beginning with FY 2002-2003 and continuing in FY 2003-2004, an operational budget of $50,000 per year for the Forensic Science Program has been provided through the university. This university-supported operational budget has been used to provide salary and benefits for a program secretary as well as funds for office expenses. For FY 2002-2003, the university also supplied three computers to the program. For FY 2003-2004, one computer was appropriated. A significant source of Program funding is through the School of Medicine’s assessment of a “Health Professions Fee” at a rate of $2200 for residents, $3100 for metro, and $4750 for non-
residents. These student fees are assessed in addition to tuition each semester. It can be estimated that the School of Medicine will receive approximately $267,300 in forensic science student fees in 2003-04 with $154,900 returned to the Forensic Science Program in the form of program support. Among MU graduate programs, only the Forensic Science, Medical Science and Biomedical Science students are assessed this fee with a fee waiver for Biomedical Science students. This fee structure began with the 2001-2002 school year and it is anticipated that this funding will continue to be the primary source of funds for the Program’s operational budget. Indirect costs from NIJ Crime Laboratory Improvement Project (CLIP) grants have been utilized to support graduate assistantships for students in the WV CODIS Laboratory, Forensic Analytical Chemistry and Comparative Analysis sections of the Program while direct costs from USDA grants have supported graduate assistantships in Bacterial Source Tracking and Microbial Forensics.

b. **Facilities:** A list of facilities and equipment is provided in Appendix 5.1. Program facilities are situated in multiple locations. Some facilities are provided by the University, e.g. the Forensic Science Center and research space in the Medical Education Building. Faculty and classroom space in the Fairfield Medical Building is paid through the State Forensic Lab Appropriation while laboratory space in the VA Research Facility is provided through direct costs from a USDA grant. In addition, the University provides the Program access and use of the retired Fairfield Stadium which is utilized to stage mock crime scene investigations for students and the WV State Police. The Fairfield Building is located 2 blocks from the Center and utilized as a classroom/office space for students, Dr. Rankin and Ms. Rushton. Two offices, accompanying laboratories and a classroom in the Fairfield Building are used for instruction and research in the forensic comparative and analytical chemistry sections of the curriculum. Dr. Staton is located at the Medical Education Building, approximately 8 miles from the Forensic Science Center, where laboratory space is rented from the Veteran’s Administration Research Facility utilizing direct costs from a USDA grant. Rental of office/laboratory is considered to be a temporary solution for the current faculty and student body until space is available in the planned Biotechnology Building. Three office/laboratory suites are dedicated to the Program in the Biotechnology Building to be constructed on the main campus of Marshall University in the next 5 years.
In addition to utilizing rented space for instruction, Forensic Science courses are taught in the East Wing of the Forensic Science Center. Although the majority of the Forensic Science Center is dedicated to performing DNA typing for the purposes of state CODIS projects, the East Wing serves as a classroom for students and law enforcement personnel. This classroom is equipped for distance learning with a “Smart Board” which allows web sites to be displayed for the classroom presentations. Fifteen interactive work stations are located in the facility allowing each student to have his/her own work station. The workstations are used for word processing, internet connections and for class presentations. Also in the East Wing is a student laboratory which serves multiple courses and is specifically equipped for instruction in microbial forensics and DNA technologies.

The rental space occupied by Rankin and Rushton in the Fairfield Building has a small classroom which supports Forensic Chemistry classes (FSC 622, FSC 628), the Comparative Science classes (FSC 618), and Forensic Microscopy (FSC 612). In addition, the research laboratories located adjacent to the classroom double as teaching laboratories for students. The small size of the laboratories presently requires dividing the class of 15 students into sections in order to provide more individualized instruction. Construction of the Biotechnology Building will partially eliminate this problem. It should be noted, however, that the space allotted in the new facility will only accommodate existing faculty with no consideration for Program growth or the space needs of future faculty. A new addition to the Forensic Science Center, called the West Wing, is currently under construction. Dedicated, in part, to the development and implementation of a Cybercrime Emphasis for the Program, the West Wing will accommodate approximately 45 students and law enforcement trainees. The West Wing is currently under construction with a 2004 first-phase completion date.

5. Assessment Information  The Forensic Science Program’s assessment plan is summarized in 3 charts as follows:
   A. Assessment of Curriculum Outcomes (Appendix 2.1)
   B. Assessment of Faculty Outcomes (Appendix 3.1)
   C. Assessment of Student Outcomes (Appendix 4.1)

Assessment instruments include:
   A. Course & Instructor Evaluations per Semester
   B. Student and Faculty Evaluation of Student Presentation Skills
   C. Student Evaluation of the Internship Experience (pending)
D. Internship: Evaluation of Student by External Agency
E. Comprehensive Examination
F. Student Exit Evaluation of the Program
G. Post-Graduate Evaluation of the Program
H. Employer Evaluation of Graduates

All information gathered through assessment instruments is reviewed by the Program Director and faculty for use in Program improvement. In addition, the Program encourages student feedback by providing a formal line of communication through the Program Coordinator with informal lines through individual faculty members and staff. The Coordinator is responsible for bringing student concerns or suggestions to the faculty through regularly scheduled faculty meetings as well as through informal communications. It is not uncommon for the Forensic Science Student Organization, known as MUFIA: Marshall University Forensic Identification Association, to put forth its own proposals for program improvement. MUFIA’s website may be visited at http://mufia.50megs.com. A Forensic Science Student Handbook containing program information and policies was developed and improved upon through student assessment feedback. Assessment also uncovered negative feedback from students for being assessed a substantial fee in addition to their tuition that is not charged to other science- or technology-based graduate students at Marshall University. In the exit evaluation of the program, a significant number of students indicated that the fee structure was not fair. Although the Program could sympathize with student concerns, there was little the Program can do to alter the fee when the Program’s subsistence and growth was dependent on it. However, through the assessment process, the Program was able to recognize the extent of this problem in class morale. The faculty met and a decision was made to make changes in the curriculum to off-set these fees in the summer months. So far, students seem to be pleased with this administrative action. In addition, student feedback was also instrumental in approaching administration with the request for additional equipment for student laboratories which was granted by the university in 2002-2003. Another example where assessment made a difference was related to effectiveness of our internship program. In the past, students have been evaluated by their internship supervisor with good results suggesting that the student’s experience was excellent. However, this year we added an assessment instrument to determine if students were satisfied with their internship experience, how they and their supervisors might have been better prepared prior to the actual experience and how the Program could be instrumental in improving the process.
Program Statement

Previous Reviews

The first full Review of the program was conducted by the University System in 1999. The result of the review was favorable and in a letter dated April 27, 1999 stated “The department does a good job of advocating the unique nature of the program”. A follow-up report was requested by January 15, 2000 which addressed the “institutional commitment to the program with respect to faculty and distinct resources pledged to the program.” The report was issued and satisfied the query of the Board.

Strengths / Weakness

Strengths: Applicants, students and graduates continue to be a significant program strength. Consistently, over 150 exceptionally qualified applicants from across the state and nation compete for entry into the Program on an annual basis. With an outstanding applicant pool, the Program enjoys an accomplished and diverse student body highly motivated to pursue a rigorous education in forensic science. Students continue to be successful in attracting forensic internship sponsors while graduates are welcomed into the forensic science community as evidenced by a high employment rate and favorable employer evaluations. The Forensic Science Program is achieving a national reputation for excellence in the forensic laboratory community and enjoys strong ties to law enforcement through the NIJ and the WV State Police on a state and national level. Also national in scope, the MU Forensic Science Director is a founding member of the Forensic Science Network and the Technical Working Group for Higher Education in Forensic Science. The program is multidisciplinary in scope and focuses not only on traditional forensic science disciplines, but also on newly developing areas of forensic science education to include those related to homeland security. Since the last evaluation, the Forensic Science Program has grown in course and research offerings. The Office of the President has been supportive of the Program by providing funds to purchase a gas chromatograph coupled to a mass spectrometer, an infrared microscope, several pieces of supportive equipment and a rapid DNA sequencer. The program also received three computers provided by the university. External funding has been a tremendous support to the Forensic Science Program through use of indirect costs. Much of the equipment that benefits the program was purchased using indirect cost funds accumulated from the NIJ grant to include DNA equipment purchased to benefit law enforcement. Some of the same equipment is utilized for laboratory exercises for forensic science students.
**Weaknesses:** From its inception in 1994 to today, the Program has been supported through indirect funds from federal grants. In 2002, the University began providing the Program with an operational budget of $50,000 per year which covers the cost of a program secretary with the remainder utilized for office expenses and other program needs. To address the growing needs of the Program, it would be appropriate to have a separate salary/benefit line for the program secretary in addition to the $50,000 annual operational budget. Forensic science students bear the greatest burden for program support through payment of a Health Professions Fee ranging from $6600 per student per year for residents $14,250 per student per year for non-residents, in addition to tuition and general fees. The School of Medicine collects approximately $267,000/year from forensic science students fees with a portion (58%) being returned to the Forensic Science Program. For program maintenance, growth and development, special consideration should be given to returning the entire amount to the Program. A second concern is limited teaching space requiring classrooms and research activities to be located at some distance from the Forensic Science Center. Space- and equipment-related aspects include the need for multiple sections of the same course to be taught to accommodate the number of students currently enrolled in the Program. Construction of the Biotechnology Building on the main campus of Marshall within the next 5 years should alleviate space issues for current faculty. Three laboratory/office suites are dedicated to the Forensic Science Program which will benefit existing faculty. However, the expanding need for faculty was not anticipated in these plans. In addition, the Program would benefit from having all faculty on 12-month state-supported commitments. The forensic science program is a year-round program which includes a required summer internship between the first and second years. Currently, faculty mentor students through their summer internships without University-supported compensation. Except for the director and secretary, the 9-month and 12-month faculty are paid for the summer months through indirect costs from federal grants. Furthermore, the part-time faculty member is entirely paid through indirect cost resulting from external funding. Should a lapse in external funding occur, a real concern exists that essential faculty would not be available for comparative sciences, summer courses and other essential Program operations. A contingency plan for University support of the part-time faculty member throughout the academic year and summer term and support of full-time faculty members through the summer term is needed in the event that grant funding is not available.

**B. Viability**

1. **Off Campus/Distance Delivery Classes:**

   The Forensic Science Program has not offered its classes via a telecommunications format except in one instance. A course in Cell and Molecular Biology was presented to members of the Alabama Crime
Laboratory of the Alabama Department of Law Enforcement. We viewed this class as a pilot to allow us to hone our skills in using the distance learning technologies and a teaching format that was conducive to distance education. Lessons learned through this effort will allow us to offer distance delivery courses in the future.

2. Service Courses:

Due to the sensitive nature of forensic science course content and the supplemental fee structure, our courses are not offered to students outside of the program. One exception is FSC 604 which is cross listed with Chemistry 428. All students enrolled in the Forensic Science Program are assessed a substantial Health Professions Fee each semester. Should some courses be considered for increased enrollment of non-majors, a similar fee structure would need to be developed and implemented.

3. Articulation Agreement

No agreements with other institutions have been or are currently in place. It should be recognized that the Forensic Science Program has a MOU with the WV State Police to provide education, research and service to promote their crime laboratory. This document was first signed by President Gilley, and then President Angel, with the educational aspect of this agreement focusing on continuing education as part of the Forensic Resource Network.

4. Program Course Enrollment

Course enrollment in Forensic Science Courses primarily reflects formally admitted forensic science students. Before the terrorist attacks of September 11, the Forensic Science Program was flexible in allowing graduate students to take specific courses in the Program without formal admission. Since 9/11, the Forensic Science Program has taken a more conservative approach requiring students to be formally admitted to the program as a prerequisite for course enrollment. In fact, the admissions process is used in lieu of a formal background investigation for entering students. A list of course enrollments for the review period is provided in Appendix 4.10.

5. Program Enrollment

Program enrollment is currently limited to 15 students per year. There are several reasons for this. One is the limited space and equipment for laboratory instruction. For example, in Forensic Analytical Chemistry I and II only 2 instruments are available for student use thus requiring these laboratories to be split into sections. Until additional space and equipment are available, class size in the Forensic Science Program will be limited.
Secondly, Program enrollment is directly dependent on the number of quality forensic science internships that can be secured on an annual basis. With a class size of 15, the majority of students are able to find internships within the State of West Virginia. An internship contingency plan would be needed should the class size be expanded significantly.

6. Enrollment Projections

Forensic Science is a desirable career option as demonstrated by the number of applications received each year. It has been estimated that more than 10,000 forensic scientists are needed to properly staff the nation’s crime labs so we predict that the program’s popularity will continue in the foreseeable future. It is also estimated that the federal government will experience a large number of retirements over the next decade and this is especially true of law enforcement and forensic scientists. At the same time the legal system is asking more from forensic scientists with more highly trained laboratory analysts and investigators being required. The level of technological sophistication and an appropriate knowledge base are required of today’s forensic scientists and this must be documented through formal degree programs, as well as structured continuing education. Considering these demands, students seeking advanced degrees in this discipline must matriculate with high marks and a strong science background in addition to high ethical standards. A new field of forensic science known as Microbial Forensics is in development with a national need for forensic science graduates who are educated in biothreat crime scene investigation and testing. It can be predicted that perspective students will seek out this program to attain these new skills.

Against this backdrop, it is anticipated that the current trend of about 150 exceptionally qualified applicants for the limited number of slots (currently 15) will continue or expand. It is also anticipated that MU Forensic Science Program will expand its class size to 25 students over the next several years. Limitations to increased student enrollment are the need for classroom space and having sufficient access to summer internships for admitted students. As a result of the West Wing addition, a classroom will be available to hold about 45 students. The Biotechnology Building, which will be constructed over the next several years, will offer expanded teaching space especially for laboratory-based courses. In discussions with the Marshall administration, expansion of the class size is anticipated and supported. In newly developing areas of the program such as cybercrime, courses may be cross-listed. In this event, management and assessment of the supplemental fee for students not formally enrolled in the program need to be implemented in a way that all students could be identified and assessed appropriately.
Having access to a sufficient number of quality internships is an important and limiting factor when approving the increase in forensic science class size. Historically, internships have been difficult to identify and to confirm. The MU Forensic Science Program has been fortunate in the latter respect because the WV State Police Laboratory and the WV Office of the Medical Examiner have accepted many of our student interns. In addition, the MU WV CODIS, Bacterial Source Tracking and Forensic Chemistry Laboratories have served as a ‘safety net’ for students whose off-campus internships do not materialize at the last minute. At best, these on-campus facilities have their own space and limitations for the number of student interns they can reasonably accommodate. The stumbling blocks students face in obtaining off-site internships is best illustrated by the requirement of a background check by law enforcement agencies. This process may take several months with the student being notified only a short time prior to needing to begin the internship experience. Internships, even at this point, may fall through at the last minute and alternative plans must be developed. Signing formal agreements with internship sponsors may be one way of securing dependable commitments for an expanded forensic science student body. A list of past internship sponsors is provided in Appendix 4.8

C. Necessity

1. Advisory Committee:

The Graduate Studies Committee (GSC) for Forensic Science serves as the advisory committee for program issues, curriculum and student affairs. It is composed of the Faculty of Forensic Science Program, Dean of the Graduate College, VP of Research & Associate Dean Graduate Studies and a faculty member from the College of Science. The Secretary for the Forensic Science Program serves the GSC in scheduling meetings and preparation of meeting minutes. The GSC reviews student applications for the program and approves those students selected for each class.

2. Graduates

Graduates readily acquire positions in forensic science laboratories throughout the country. Approximately 25% of our graduates have found positions within the State of West Virginia to include 7 individuals at Marshall University and 14 individuals at the West Virginia State Police Laboratory. Three other graduates are employed in West Virginia as arson investigators. Four of our graduates have elected to attend Medical School at Marshall. A current list of graduate employers is included in Appendix 4.6. Starting salaries are variable depending on the area of the country, federal vs. state agency as well as the particular agency under consideration. West Virginia is one of the lowest paying states with a
significant salary differential between civilian and sworn trooper forensic scientists. The salaries at the MU Forensic Science Center are grant funded and therefore more competitive than those offered through the WV State Police. In addition, graduates may leave the state for higher salaries or for specialties not available in West Virginia.

3. Job Placement

One of the most important factors in job placement is the internship which is required of forensic science students during the summer months following the first academic year. Students often select internships based on their interest in a particular specialty area provided by that crime laboratory. The location of the laboratory is also a factor since some students select a laboratory in their home region or state. Internships have historically helped establish a relationship between the laboratory and the student to facilitate their ability to obtain positions either in the very same lab or others within the system. At a minimum, the sponsoring lab will provide letters of recommendation on behalf of the student. Another important aspect of the internship is that students develop a laboratory notebook that serves as a portfolio to be presented at future job interviews. This allows prospective employers to determine the level of laboratory experience and their report writing skills. During the two years while students are at the MU Forensic Science Center, numerous job announcements are directly forwarded to our office or listed on web sites available to students and staff. The Program monitors and posts regional job opportunities as well as salaries. Contact is maintained with graduates who assist the Center in submitting job announcements. Most graduates of the Forensic Science Program are gainfully employed in the field of forensic science, while others have utilized their educational background to pursue other career paths to include law and medical school. A list of Forensic Science Graduate Employers is provided in Appendix 4.6. The Forensic Science Alumni Directory is updated yearly and published for currently enrolled students, faculty and alumni. The results of the Graduate Satisfaction Survey (Appendix 4.9) and Graduate Employer Survey (Appendix 4.7) are used to provide suggestions for program improvement.

D. Consistency With Mission

The Forensic Science Program exemplifies the University’s Mission Statement as demonstrated by the Program’s commitment to 1) the enhancement of forensic science graduate education, 2) expanding the forensic science body of human knowledge and achievement through research, 3) commitment to society through faculty and student public service activities, 4) selection and graduation of a diverse forensic science
student body, and 5) assuring the integrity of the forensic science curriculum by establishing rigorous standards and high expectations for student learning and performance. Several aspects of the Forensic Science Program, as presented in this report, demonstrate achievement of these goals.

IV PROGRAM OF EXCELLENCE

An assessment of forensic sciences published in 1999 by the National Institute for Justice (NIJ), entitled *Forensic Science: Review of Status and Needs*, described the educational and training needs of the forensic science community as “immense.” The Forensic Science Program is in a pivotal position to exemplify this national effort to meet the educational needs of a state and a nation by setting high standards in forensic science education. Exceptional leadership has been fundamental to the Program’s success. Currently, the Director of the MU Forensic Science Program is a member of the independent, community-wide, consensus-building, standard-setting body known as the Technical Working Group (TWGED) for Higher Education in Forensic Science. The Program Director also serves as a founding member of the Forensic Resource Network (FRN) created by the National Institute of Justice (NIJ) to serve as a resource to other forensic science programs across the country. The Marshall University Forensic Science curriculum currently meets the TWGED guidelines for higher education, DNA Advisory Board (DAB) guidelines for Forensic DNA Analysts, in addition to meeting Drug Enforcement Agency (DEA) and the Alcohol, Tobacco and Firearms (ATF) requirements for Forensic Chemists. While national accreditation standards for forensic science educational programs are under development, the Program seeks to meet May 2003 pilot guidelines stated in the initial document put forth by the American Academy of Forensic Sciences Forensic Science Education Programs Accreditation Commission. The Program Review process has been important in setting the stage for Program accreditation in the near future. Essential to the accreditation and program review process is having processes in place for evaluating and monitoring the Program’s overall effort to fulfill its mission, goals and objectives. This has been achieved in a number of ways to include 1) student evaluation of course/faculty and internships, 2) assessment of student performance on a comprehensive examination, 3) internship sponsor evaluation of students, 4) graduate and employer satisfaction surveys and 5) end-of-program questionnaire. Through the assessment process the Program continues to set the standard for educational programs across the country. In fact, the University of Denver has selected Marshall University’s Forensic Science Program as a model for establishing its own CODIS-based educational program in forensic science. Approved in 1994, the Marshall University Forensic Science Program has graduated 6 classes and 86 students. The Program is one of only 15 Master degree programs in the country and is the
only program in the country supporting both an educational program and a CODIS DNA testing facility under one roof. Through an active Forensic Science Seminar Series, the Program continues to draw forensic specialists from the FBI, DEA, Medical Examiner’s Office, Secret Service, the West Virginia State Police and the Fire Marshall’s Office to serve as guest speakers. These seminars are transmitted live as a continuing education activity to the West Virginia State Police. Students and faculty also actively participate in giving presentations at the local, regional, state and national level. Professional development is an important aspect of our students’ educational experience. Students are active student members of the American Academy of Forensic Science (AAFS) and the International Association of Identification (IAI) at the national level. On a local level, the student organization, known as MUFIA (Marshall University Forensic Identification Association), sponsors community service activities to include child identification and safety programs. Students also benefit from the Program’s active involvement in piloting research projects with the West Virginia Department of Agriculture, the U.S. Department of Agriculture and EPSCoR States in studying the use of DNA technologies for microbial source tracking and bioterrorism. In addition, the Program has created on-site summer internship programs for students specializing in DNA analysis, microbial forensics and forensic analytical chemistry. A summer training program in DNA technologies for high school teachers has also been created. Program growth and development is evidenced by the creation of new facilities. A new distance learning wing, the “West Wing”, is currently under construction which will house new computer equipment for use in collaboration with local and regional law enforcement agencies. The “West Wing” will serve as an expansive classroom and conference center and the home base for a future educational track in cybercrime investigation. The Program continues to share its expertise by being instrumental in writing, and advising on, grants for bioterrorism preparedness training of medical and other health care students across our campus. Three faculty, and their respective research programs, will move to the new Biotechnology Building upon its completion. One forensic science laboratory will be equipped with a Biosafety Level 3 research capability thus facilitating the development of the Microbial Forensics Emphasis for the Program. Through these and future Program activities, students are exposed to multifaceted educational experiences inside, and outside, the classroom and laboratory setting. Furthermore, graduates are highly employable as exemplified by graduates currently working in crime labs in West Virginia, Maryland, Utah, Georgia, Ohio, the United Kingdom and Iceland, FBI crime labs, the Secret Service, the Armed Forces, the Institute of Pathology, Marshall University’s CODIS Laboratories, and as members of Marshall University’s teaching staff. Five West Virginia State Police Officers are graduates of the MU Forensic Science Program.
VISION:
Marshall University Forensic Science Center strives to be a model for developing both academic and applied programs at Marshall University and throughout the nation. The faculty and staff envision taking lead roles in initiating scientific research, in advancing knowledge in forensic science, and in serving as stakeholders in the economic development of our region.

MISSION:
Marshall University Forensic Science Center’s mission is to provide quality forensic science education, advanced scientific analysis and innovative economic opportunity for the promotion of truth and justice in our community, state, and nation.

ACADEMIC PROGRAM:
• Offers Master’s degree in Forensic Science known for DNA technology and toxicology, and is one of twelve forensic science graduate programs in the country.
  o Innovates with new programs in computer forensics, bioterrorism.
  o Provides distance learning from DNA laboratory and classroom for training and education.
  o Development of west wing expansion for classrooms and conference center.

CODIS:
• CODIS (Combined DNA Index System) is the nationwide searchable database, coordinated by the FBI, that contains DNA profiles of convicted felons and case evidence.
• Center provides DNA databasing of convicted offenders for West Virginia.
• Center’s laboratories are nationally accredited for DNA databasing.

ECONOMIC DEVELOPMENT:
• Parentage Testing Services, under development, will provide individual and criminal paternity testing locally, regionally, and nationally.
RESEARCH:

- **Mitochondrial DNA basic research** to assist in the development of an FBI database for missing children.
- **Smokeless powders** to assist federal agencies in individualizing identification to establish sources and distribution networks.
- **Bacterial Source Tracking** using new DNA technologies to rapidly identify sources of bacterial contamination in water.

PROJECTS:

- **Potomac River Project**, a project of the West Virginia Department of Agriculture (WVDA), MUFSC, and USDA utilizing bacterial source tracking to identify sources of bacterial pollution in watersheds of the South Potomac River and in the Eastern Panhandle.
- **Member of the Forensic Resource Network**, which nationally supports the forensic community through training, technology transfer, R&D, testing and evaluation and analytical services.
  - MUFSC is assisting the Alabama Department of Forensic Science with development of high throughput capacity, offering distance education courses to DNA analysts, and assisting in development and implementation of quality systems.
  - Development of Sexual Assault Nurse Examiners (SANE) training course for nurses & website development.
- **School Bus Security Project** is a cooperative effort with the Rahall Transportation Institute and Cabell County School Systems to create security features for a prototype school bus to prevent intrusion and sabotage.
- **First Responders DNA Pilot Project** proposes to provide DNA profiling services to West Virginia firefighters and EMS workers throughout the state. Pilot project has been initiated.

March 2003
WHO WE ARE

As an important contributor to the Mountain State, agriculture is more than the 20,000 family farms that can be found throughout West Virginia.

A recent quantitative study to determine the economic impact of the more than 400 agribusinesses statewide found that these success stories generated over $100 million in revenue last year. From honey to salsa, maple syrup to hot peppers, these diverse businesses not only benefit our economy, but also serve as ambassadors of the great things available in West Virginia.

But agriculture is also more than business development. Environmental programs continue to answer our critics with science. Our Water Quality Laboratory in Moorefield is leading the country by tracking the sources of contaminants through their DNA. By implementing voluntary programs, we are working with farmers to protect our water resources (http://www.state.wv.us/agriculture/about.html).

The Joan C. Edward’s School of Medicine Microbiology, Immunology, and Molecular Genetics department is dedicated to the training of medical and biomedical graduate students and conducting research in the areas of medical microbiology, immunology and molecular genetics.

- Current departmental research projects include: identification of cardiovascular disease susceptibility genes
- Genomic mapping of Pseudomonas aeruginosa for biofilm formation inhibitors
- Autoimmune response and regulation of skin-directed autoimmunity
- Studying innate immune response to group B Streptococci
- Use of mouse models for better understanding of genetics associated with inherited deafness (Usher type I syndrome) and renal cystic disease.

Providing DNA analysis to determine sources of contamination in the Potomac River...
The Potomac River Project is a joint project between the West Virginia Department of Agriculture (WVDA) and Marshall University started four years ago to study bacteria in the South Potomac River watershed.

The goal of the River Project was to track sources of bacterial pollution by comparing bacteria (E. coli) found in the water with a database of known domestic and wild animals in the area. This is called “microbial source tracking.”

A DNA based technique called Pulsed Field Gel Electrophoresis (PFGE), was chosen for the project based on the Center for Disease Control (CDC) PFGE tracking system for food and water born illness outbreaks (PulseNet).

To get a ‘fingerprint,’ E. coli is collected and isolated from different known sources of waste material, such as geese, deer, cows and chickens. These patterns are the bacteria’s genetic ‘fingerprints.’ ‘Fingerprints’ are stored in a database and matched with ‘fingerprints’ obtained from E. coli found in polluted water.

The desired outcome of the Potomac River Project is to:

- Identify source(s) of E. coli contamination in the Potomac River
- Use results to develop public policies to address the problems and their sources
- Transfer this technology from Marshall University to the Department of Agriculture for on-going monitoring
- Determine source(s) of E. coli contamination in other polluted river areas in West Virginia
- Create a model system of microbial source tracking for the nation
- Make West Virginia’s waterways cleaner and safer through DNA technology.

IMPACT ON THE ENVIRONMENT

Recently the Environmental Protection Agency (EPA) observed increased volumes of *Escherichia coli*, E. coli, in the different sections of the Potomac River.

Coliform bacteria are normally found in the intestines of humans and other mammals and are discharged in waste. This caused these sections to be placed on West Virginia’s endangered waters list due to high levels of fecal coliform bacteria.

With a strong poultry agricultural industry in the area and large amounts of wildlife present, it was unclear whether bacterial pollution was caused by wildlife, agriculture, or human sources.

Every warm blooded animal from a mink to a fisherman can be a source of fecal coliform bacterial contamination of a waterway.

With monitoring and testing the identification of potential sources of contamination can become a reality. This is an important step in improving the water quality.

Thus, Marshall University and the West Virginia Department of Agriculture are in the process of finding a solution.
Forensic Resource Network Members:

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The FRN was created by the National Institute of Justice as a mechanism to increase the capabilities and capacities of local and state forensic laboratories. While forensic scientists strive to meet the immediate needs of their community, technology is moving forward.

Advanced technology implementation requires crime laboratory personnel to learn new skills through continuing education & credentialing. New technology must undergo refinement and validation before acceptance and technology transfer into working crime laboratories.

Consensus method standards and traceable materials must be available to allow laboratories to operate at the highest level of quality and maintain public confidence.

Members of the FRN are able to meet the technology and training needs of the forensic science community and create model programs that can be directly transferred to state and local crime laboratories.

The four critical areas addressed by the FRN — (1) training, (2) technology transfer, (3) methods research and development, training & evaluation, and (4) analytical methods — prepare forensic scientists to meet current and future challenges affecting national guidelines and stakeholder expectations.
WHO SHOULD ATTEND?

HEALTH CARE WORKERS
LAW ENFORCEMENT
PROSECUTORS
SOCIAL WORKERS
COUNSELORS
ADVOCATES
SCHOOL PERSONNEL

Sponsored by:

Marshall University Forensic Science Center*

Cabell County Sexual Assault Task Force

West Virginia Foundation for Rape Information and Services**

* Supported under Award number 2001-RC-CX-K002 from the Office of Justice Programs, National Institute of Justice, Department of Justice.

** This project was supported by Grant No. 02:VAW-007 by the Violence Against Women Office, Office of Justice Programs, U.S. Department of Justice. Points of view in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.
7:30 a.m.-8:00 a.m. **REGISTRATION**

8:00 a.m.-8:10 a.m. **Welcome**

Chris Chiles, Cabell County Prosecuting Attorney

8:10 a.m.-9:00 a.m. **The Role of the Victim Advocate**

Jennifer Crespo, Executive Director, CONTACT

This session will address the role of the Rape Crisis Center as a vital member of a community Sexual Assault Response Team and provide information on the psychological and emotional needs of victims and how rape crisis center personnel address these needs.

9:00 a.m.-11:00 a.m. **Law Enforcement Response and Issues of Evidence Collection**

Captain Ted Smith, Laboratory Director, WV State Police Crime Laboratory

This speaker will provide information on the basic methods and procedures used to collect, process and analyze forensic biological evidence from sexual assault cases.

11:00 a.m.-12:00 p.m. **Prosecuting Sexual Assault Cases and the Forensic Medical Examination Fund**

Peggy Brown & Greg Howard, Cabell County Prosecuting Attorneys

This session will provide an overview of the laws pertaining to sexual related crimes and what is necessary for the successful prosecution of these cases. The WV Forensic Exam Fund and how it can be a valuable asset in the preparation and prosecution of sexual assault cases will also be discussed.

12:00 p.m.-1:00 p.m. **LUNCH (On Your Own)**

1:00 p.m.-2:00 p.m. **HIPAA: Practicing Good Privacy and the Impact on Access Rights by Law Enforcement**

Robert Coffield, Attorney, Flaherty, Sensabaugh & Bonasso, PLLC

This speaker will provide a brief history of HIPAA and an explanation of privacy standards. Disclosure for public interest and benefit activities as it pertains to victims, law enforcement purposes and judicial proceedings will also be discussed.

2:00 p.m.-3:00 p.m. **A Multidisciplinary Approach to Child Victims**

Millie DeVore, CPS & Kim Runyon Wilds, CASA/Team for WV Children

This session will provide an understanding of the need for reporting all suspected sexual abuse/assault of children under the age of 18 as well as discuss the collaborative efforts that assure the safety of children.

3:00 p.m.-4:00 p.m. **SESSION A**

**ABC’s of Being a Sexual Assault Nurse Examiner**

Sam Silverstein, Sexual Assault Nurse Examiner, Charleston Area Medical Center

This session will focus on the forensic medical exam as performed by a Sexual Assault Nurse Examiner. Documentation and testimony tips will be provided.

**SESSION B**

**Getting Past the Badge**

Dr. Robert Grubb, Jr., Associate Professor, MU Criminal Justice Department

This session will provide techniques on facilitating rapport and acquiring information in a non-threatening manner.

4:00 p.m.-5:00 p.m. **The Psychological Effects of Sexual Assault**

Dr. Gary Patton, Director of Pastoral Care, St. Mary’s Medical Center

This speaker will provide discussion on the psychological disruption in thought, emotion and behavior that can occur due to rape and sexual abuse.

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**CREDITS**

Approved Credits Hours

8 Credit Hours for Nurses-Provider Number: WV200-309RN
8 Credit Hours for Counselors-Provider Number: WBEC-518
8 Credit Hours for Social Work-Provider Number: 490094

Continuing education credit approval is pending for law enforcement.

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**INFORMATION**

For additional information contact:

Misty Marra
Phone: (304)690-4363 x 210
Fax: (304)690-4360

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**REGISTRATION FORM**

Sexual Assault Response Training

Title and Name

Agency

Agency Address

County

City, State, and Zip

Phone Number

Email Address

Check Your Breakout Session Preference:

___ Breakout Session A
___ Breakout Session B

Mail to: MU Forensic Science Center
Attn: Misty Marra
1401 Forensic Science Drive
Huntington, WV 25701

To register by phone please call Misty Marra at 304-690-4363 X 210 or fax your registration form to 304-690-4360
School Bus Security Project

Rahall Transportation Institute
1900 Third Avenue
West Wing
Huntington, WV 25703-1107

Marshall Univ. Forensic Science Center
1401 Forensic Science Drive
Huntington, WV 25701-3628

Providing secure school bus transportation for children...

School Bus Statistics
(Source: USA Today)

⇒ 23.5 million students ride school buses each day.

⇒ There are 450,000 yellow school buses in the United States.

⇒ An average of 11 children are killed each year in school bus accidents.

⇒ Nearly 8,500 are injured each year in school bus accidents.

“There are limited national standards for school bus security, so it is important for those with a forensic and transportation background to develop such standards.”

Dr. Terry W. Fenger
Director of Marshall University Forensic Science Program
**Purpose**

The goal of School Bus Security Project is to create a prototype school bus that is secure from intrusion and prevents sabotage. A Cabell County school bus is being retrofitted by researchers in the Marshall University Forensic Science Program.

**Partnership**

The School Bus Security Project being developed by the Marshall University Forensic Science Program, the Rahall Transportation Institute, and the Cabell County School Systems.

**Projects**

**Archiving**

- Archived data of school bus events, such as hijackings, bombings, stabbings/shootings, kidnapping and drug abuse are being compiled.
- A motive and criminal profile is then accessed of the person(s) who committed these acts.

**Mapping**

Maps are designed to illustrate school bus routes and the hazards presented on these routes. These maps make it easier to illustrate the individual stops, number of children picked up at each stop and location of the children’s home in relation to the stop.

This information can be used to prevent future acts of intrusion and sabotage.

Maps will illustrate:
- school bus routes
- locations of bus stops
- locations of schools, hospitals and police departments nearby.

**Test Scenario**

- Mock tests to portray hazardous events on a school bus will test the technology, GPS, mapping and response time.

**Phases**

**Phase One**

This low cost/low tech approach entails locking the bus during storage and during the driver’s absence. In addition, locking mechanisms will be applied to the battery covers, gas fill cover, the hood of the engine and all entrance doors.

**Phase Two**

This moderate cost/moderate tech phase will require the installation of off-the-shelf sensing devices obtained from electronic stores.

**Phase Three**

This high cost/high tech approach is achieved by adding mini-digital cameras for surveillance during storage and a Global Positioning System (GPS) unit. The GPS is used to track the school bus position in real time.
First Responders DNA Pilot Project

Setting a precedent in first responder emergency preparedness, the Marshall University Forensic Science Center’s (MUFSC) First Responders DNA Pilot Project provides DNA profiling services to West Virginia first responders. In West Virginia, there are an estimated 12,000 firefighters, 93 percent of whom are volunteers. There are an estimated 8,500 EMS workers. MUFSC is collaborating with a Marshall University researcher to develop the first attitudinal study in the nation of first responders and their families regarding concerns or issues they may have about DNA profiling.

Our research indicates first responders will be interested in DNA services to:
- provide peace of mind to first responders and their families.
- eliminate need to contact families for personal articles after a mass disaster/accident.
- establish faster identification of remains.
- assist with insurance settlements.
- potentially aid in criminal/terrorist investigations by process of elimination.

The project starts with firefighters and EMS workers in Cabell, Kanawha, Monongalia and Hardy counties on a voluntary basis.
- Profiles have been completed for Morgantown, W.Va., firefighters who initially requested DNA profiling services.

Participants receive a certificate showing their DNA profile along with statistical analysis determining their uniqueness in the general population.
- All results are confidential and individuals maintain control of results.
- The analysis is not a genetic test and does not provide information for medical purposes.

Statewide expansion of the project is planned after pilot completion and additional funding sources are identified. Any first responder in the state can request these services for a reasonable fee.

MUFSC continues to collect letters of support and has received letters of support from emergency responder groups around the state, including the West Virginia State Fire Marshal’s Office, the West Virginia Office of Emergency Medical Services, and the West Virginia Enhanced 911 Council.

If you would like to provide a letter of support for the project, please send it to the Marshall University Forensic Science Center, 1401 Forensic Science Drive, Huntington, WV 25701, or call 304-690-4363 ext. 207 for more information.

April 2003