



# **AMERICAN ACADEMY OF FORENSIC SCIENCES**

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**FEPAC Form 5.2**  
Revised 04/2013

## **Forensic Science Education Programs Accreditation Commission (FEPAC)**

### **Self-Study Report**

1. Name of the Institution:

Sam Houston state University

2. Mailing address:

SHSU Box 2525  
Chemistry & Forensic Science Building  
1003 Bowers Blvd  
Huntsville TX 77341

3. Name of Forensic Science Program:

Master of Science in Forensic Science

4. Department, Division, and/or School in which the Forensic Science Program is located:

Department of Forensic Science

5. Name and title of Forensic Science Program Director:

Dr. Sarah Kerrigan

6. Contact information for the Forensic Science Program Director:

Telephone: 936.294.4286

Fax: 936.294.4905

E-mail: [Sarah.kerrigan@shsu.edu](mailto:Sarah.kerrigan@shsu.edu)

7. Program information:

Number of Faculty	Current Academic Year	Previous Academic Year
Full-time	4 (5 Fall 2013)	3
Part-time	2	2

Number of Students	Current Academic Year	Previous Academic Year
Full-time	23	21
Part-time	0	1

Email: [membership@aafs.org](mailto:membership@aafs.org) • Web Site: <http://www.aafs.org> • Federal ID Number: 87-0287045

## SECTION 1 – GENERAL STANDARDS

### 3.0 STANDARDS FOR ALL PROGRAMS

All undergraduate and graduate programs seeking FEPAC accreditation must meet basic requirements of eligibility.

#### Standard 3.1 Eligibility

1. The institution offering the program is regionally accredited; and
2. The degree awarded upon successful completion of the program is at least a bachelor's degree in one of the following:
  - Forensic Science
  - Digital Forensics
  - A degree in one of the following disciplines with a concentration in forensic science or digital forensics:
    - Computer Science
    - Computer/Electrical Engineering
    - Information Systems
    - Information Technology
    - A natural science
3. A program seeking FEPAC accreditation shall have graduated at least two classes before the Application for Accreditation (FEPAC Form 5.1) is submitted.

<b>Program Response</b>
<p><b>Description:</b> <i>(Briefly Describe how the Program meets the Standard)</i></p> <p>Sam Houston State University (SHSU) is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS). Accreditation of SHSU was reaffirmed in 2009. Upon successful completion of the program students receive a Master of Science in Forensic Science. The program began accepting students in the fall of 2001. The first class graduated during the spring of 2003 with a Master of Science in Forensic Science from the College of Criminal Justice. Currently students are accepted only during the fall to complete the two year full-time program. As of May 2013, a total of 112 students had graduated from the program.</p> <p>Supporting Documentation Required for Standard 3.1</p> <ul style="list-style-type: none"> <li>• <a href="http://www.sacscoc.org/details.asp?instid=60960">http://www.sacscoc.org/details.asp?instid=60960</a></li> </ul>
<p><b>Analysis:</b> <i>(Not required for this Standard)</i></p>
<p><b>Plan:</b> <i>(Not required for this Standard)</i></p>
<p><b>FEPAC Administrative Assessment Team Initial Comments:</b> The Commission has no additional comments.</p>
<p><b>Program Response to Initial Comments:</b> The Program has no additional comments.</p>

**On-Site Evaluation Team Assessment: *in compliance***

*SHSU is regionally accredited; awards a M.S.F.S. degree in Forensic Science; and has graduated more than two classes (eleven since 2003).*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

### Standard 3.2 Planning and Evaluation

The program shall have an explicit process for evaluating and monitoring its overall efforts to fulfill its mission, goals, and objectives; for assessing its effectiveness in serving its various constituencies; for modifying the curriculum as necessary, based on the results of its evaluation activities; and for planning to achieve its mission in the future. Toward this end, the program shall conduct at regular intervals an analytical self-evaluation that responds to the FEPAC standards and includes a summary statement both of the program's strengths and weaknesses with regard to each standard and of the program's performance with respect to student achievement. The program evaluation system shall consist, at a minimum, of the following elements:

1. An analysis of the results of students' performance in a capstone experience; e.g., an evaluation of forensic science standardized test results, publications and/or reports;
2. Exit questionnaire and interview of graduates;
3. Post-graduate assessment, such as job placement statistics; and
4. Demonstrate how collected information is used in the evaluation and development of the program to meet its mission, goals, and objectives.

#### **Program Response**

**Description:** *(Briefly Describe how the Program meets the Standard)*

Evaluation of overall mission, goals and objectives:

The program's evaluation system is broad and encompasses a variety of departmental, college and institutional-level activities. A variety of tools are used to assess overall performance, including formal survey instruments, feedback from students, faculty, employers, internship supervisors and practitioners/experts outside of the university system. Copies of the Curriculum Survey, Postgraduate Survey, Employer Satisfaction Survey and Internship Agency Survey are attached, as are 2013 survey results.

SHSU uses an Online Assessment Tracking Database (OATDB) to collect, manage, store and view academic and non-academic assessment information from all academic and non-academic units of the university. Key Elements of each unit's assessment process include goals, outcome objectives, indicators, and criteria for satisfying objectives, findings/conclusions, and actions. Copies of the current OATDB (2012-2013) for the MSFS Program and Department of Forensic Science are attached.

The institutional strategic planning process recently underwent some changes. In the past, the forensic science program was included within the College of Criminal Justice's Strategic Plan. In late 2013, the College of Criminal Justice was reorganized into three distinct academic departments (Department of Forensic Science; Criminal Justice and Criminology; and Security Studies). This recent reorganization now gives the forensic science program the authority to develop its own strategic plan as part of the institutional planning process. Copies of the most recent strategic plans are attached.

The university also subscribes to IDEA (Individual Development and Educational Assessment). This nationally standardized assessment tool addresses the overall quality of individual courses. The IDEA Student Ratings of Instruction evaluates student learning based on specific objectives

that are identified by the faculty/instructor. A comparative analysis is performed institution-wide and also nationally. The evaluation affords students the opportunity to provide specific feedback and comments regarding course quality. The IDEA evaluation results are provided to the instructor and a copy is maintained by the Program Director. Improvements to the courses are made as a result of this feedback. In the past the Associate Dean reviews the IDEA (teaching) evaluations and this contributes to the individual faculty member's teaching evaluation during the annual review. With the newly created Department of Forensic Science, this is now the responsibility of the Department Chair.

The student learning experience is also addressed in the Curriculum Survey, Postgraduate (Exit) Survey, and exit interviews. The Postgraduate Survey commenced in 2006, Curriculum Survey in 2007 and exit interviews began in 2010. The Curriculum Survey provides information on the content, relevance and overall effectiveness of the individual courses. The Postgraduate Survey addresses the degree to which students feel they have developed competence in the area of forensic science, acquired the necessary knowledge, skills and abilities, evaluation of academic and non-academic support, resources and overall quality of the program and faculty. The majority of students who participate in the exit interview share valuable feedback related to their overall experience and this information is documented by the Program Director.

The program conducts an Annual Quality Review. This review includes faculty and staff within the program and typically takes place during late summer. Evaluation materials are distributed prior to the review, so that specific issues, improvements and initiatives for the upcoming year can be discussed during the course of one day. During the review, the program's mission, goals and objectives are reviewed, critical assessment data is discussed, and action items are developed based upon these assessments, student performance measures, student and faculty feedback. Numerous improvements to the program have been made in response to these evaluation activities. The most recent change involved the consolidation of CSI and pattern evidence. This was in direct response to student feedback that specifically requested fewer credits for the CSI topic (initially 3) and to address the perceived overlap between the two courses (with different instructors). The two topics were ultimately combined with one instructor, to reduce overall credit hours while still maintaining the minimum instructional hours required under Standard 5.3. Other examples of the continuous quality improvement are the increases in credit hours for advanced forensic biology electives in direct response to curriculum survey results in 2011; addition of a stand alone controlled substance course rather than this topic being covered in two other courses in 2010; other examples include the addition of questioned documents and advanced toxicology electives in response to curriculum and postgraduate survey responses.

#### Evaluation of Student Performance in a Capstone Experience:

Students must successfully complete an independent research during their second year of study. The syllabus for the Capstone Research course is attached. Each student has a Capstone Research Committee, which is comprised of the coordinator, faculty advisor(s) and external advisor(s). The Program Director typically serves as coordinator and the faculty advisor serves as Chair of the Committee. Collectively, the Capstone Research Committee provides guidance, an environment conducive to scholarly research, and assumes responsibility for assessment and evaluation of the work. Student performance is evaluated by the faculty advisor, advisor(s) and coordinator in accordance with the syllabus. All capstone research is subject to external review. At least one member of the committee is external to the department. The committee is responsible for evaluating student performance and assigning the final grade. Student performance is documented using uniform, faculty-developed rubrics, which have been in use since 2010 and these are maintained in the student's capstone research file. Additionally, for the past three years students

have received formal interim performance evaluations prior to the conclusion of the capstone experience. Interim evaluations are performed by the faculty advisor using a standardized form. Each student receives three interim evaluations during the year of intensive research. Evaluations are provided in writing to the student after an oral interview to discuss performance. A compilation of standardized forms used by faculty to evaluate student capstone research performance are attached.

Gathering of Information From Graduates:

The Curriculum and Postgraduate Surveys serve as the principal tools for gathering information on overall program quality. The MSFS assumes responsibility for staying in touch with graduates, maintaining contact information and employment information. Although labor-intensive, this effort is conducted on an ongoing basis by administrative staff within the program. An alumni update tool on the department website allows graduates to inform us electronically of changes to their contact information or employment status. Postgraduate information is maintained in a "Postgraduate Database". This database of graduate student outcomes has been in use since 2006 and is maintained on an ongoing basis.

Postgraduate Assessment:

The program uses a variety of tools to assess postgraduate assessment: Since 2009, MSFS graduates have participated in the Forensic Science Assessment Test (FSAT); an Employer Satisfaction Survey has been used since 2006 to evaluate student preparedness from the employer's perspective; student publications are used to evaluate contributions to the scientific literature and forensic community; and finally, the program measures employment success within the field of forensic science within a year of graduation.

Evaluation Activities:

***Analysis: (Discuss the Program's Strengths and Weaknesses Related to the Standard)***

Evaluation activities are vastly inclusive and involve faculty, students, graduates and employers. At the program-level, the Director identifies deficiencies, corrective actions or areas of improvement and is responsible for implementing them. The major exchange of information occurs between the Program Director and the faculty, and the Dean of the College of Criminal Justice. The program has developed an effective system for data collection, evaluation and a program-level planning process that includes an annual performance audit (annual quality review).

The MSFS Program makes use of a wide variety of assessment tools, surveys, questionnaires and instruments to measure its overall performance. Program goals and objectives are clearly defined and measured annually in order to meet institutional accreditation requirements. The program supplements this overall assessment with a variety of other evaluation processes to comply with Standard 3.2.

The development of short-and long-term plans involving facilities, utilization of space, resources, budget, scheduling, assignments, faculty recruitment, student recruitment, marketing, accreditation and administration are coordinated by the Program Director, in consultation with the Dean. Faculty meetings and meeting of the Forensic Science Advisory Committee are used to solicit feedback and discuss issues pertaining to the overall planning process. Due to the very small size of the faculty and department, informal interaction and dialogue with faculty,

administrators and staff influence the planning process significantly. The program is highly responsive to change and considers the evaluation system critical to the continual improvement process.

Supporting Documentation Required for Standard 3.2:

- Curriculum Survey
- Curriculum Survey Results - 2013
- Postgraduate Survey
- Postgraduate Survey Results - 2013
- Employer Satisfaction Survey
- Employer Satisfaction Survey Results - 2013
- Internship Agency Survey
- IDEA Evaluation - Example
- Capstone Course Syllabus
- Evaluation of Capstone Performance Forms (Complied)
- SHSU Strategic Plan – 2012
- College Strategic Plan 2013-2014 – Pending.pdf
- OATDB 2012-2013 – MSFS.mht
- OATDB 2012-2013 – Department of Forensic Science.mht

**Plan: (Required)**

The very recent creation of the Department of Forensic Science will require some changes with respect to planning and evaluation. Policies and procedures within the newly created department are currently being developed to conform to institutional requirements. Additionally, the program may consider utilizing social media tools to help stay in touch with graduates via the SHSU website. This approach may help the program maintain current information on graduates and make the process of collecting data less labor intensive.

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment: *in compliance***

*All students complete a research project and written report, which approximates a thesis and serves as the students' capstone project; in addition, students complete the FSAT exam in their last semester.*

*The director/faculty have implemented changes in the past year based on student feedback (e.g. combining the CSI and Pattern courses to eliminate overlap)*

*Employment statistics are collected in an electronic database within the first year after graduation; a successful employment outcome is considered a job in a forensic lab or other scientific area or enrollment in a graduate/professional degree program.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.



### Standard 3.3 Institutional Support

The program shall receive adequate support from the institution. As with other natural or computer science program, the financial resources available to the program shall be sufficient to allow the program to achieve its mission, goals, and objectives. The resources should be comparable to those of other natural science programs at the institution.

Classrooms, laboratories, and other program facilities, including equipment and supplies, shall be adequate for the size and scope of the program. Instructional and support services for the program shall also be adequate.

#### **Program Response**

**Description:** *(Briefly Describe how the Program meets the Standard)*

##### Financial Resources:

Historically, the Program Director requests funding annually from the Dean of the College of Criminal Justice to cover operational expenses (excluding salary, fringe, facilities costs, student support and travel). Operating budgets for FY 2009 through 2013 are shown below:

FY	Operating Budget
2009	\$80,000
2010	\$76,000
2011	\$75,000
2012	\$76,100
2013	\$76,500

With the reorganization of the College into three departments in 2013, beginning FY14, the Department of Forensic Science will receive an independent budget. The proposed budget does not include significant increases in terms operational expenditures other than those associated with personnel (an additional support staff person and additional faculty). Forensic science budgets for FY13 and FY14 are attached. The institution has invested more than \$1.1M on scientific equipment purchases since 2007 (see Capital Equipment List).

During academic year 2012-2013, the institution provided \$109,000 in student scholarships and graduate assistantships (see attached). Support for student travel totaled \$4,562 in 2013 and \$3,846 in 2012 (see attached). Faculty travel totaled \$6,000 (\$1,500/faculty) for the same academic year. Additionally, the program conducted three faculty searches between 2011 and 2103. One new faculty member was hired in September 2012 (forensic biology/anthropology) and a second will join the program in August 2013 (forensic chemistry).

##### Physical Facility:

In 2008 the university invested approximately \$350K on the Southeast Texas Applied Forensic Science (STAFS) facility, an off-campus field station dedicated to forensic research and training. The facility (approximately nine acres) is contained within the 247 acre Center for Biological Field Studies, currently operated by the Department of Biological Sciences at Sam Houston State University.

The MSFS program is housed in the Chemistry and Forensic Sciences Building (CFS). This 37,000 SF facility was completed in 2006 and was built specifically to house the Department of Chemistry (College of Science) and the MSFS Program (College of Criminal Justice). Forensic

Science is located on the second floor and Chemistry on the third floor. Space allocations have not changed significantly since the last assessment. Approximately 7,700 SF is dedicated to the MSFS Program faculty, staff and students as follows: Laboratories - 5,118 SF, Administrative - 2,189 SF, Storage - 464 SF. Since the outset, chemistry faculty have occupied office space, research laboratories and teaching laboratories within the designated forensic science floor due to overflow issues.

The program also makes use of the CJ Courtroom, located in the Criminal Justice Center for various activities including moot court. The CJ Center also includes a campus hotel, which has been used in the past for staging crime scenes. Additional classrooms, auditorium and conference rooms are also available at the CJ Center, and across campus.

Library:

The Newton Gresham Library, open 100 hours week, provides access to a collection of over 1.3 million books and journals. The library also offers access to a variety of electronic resources including licensed books, journals, and bibliographic/full text databases. The Library subscribes to over 200 electronic databases, most of which include access to full text articles and chapters. In addition, the library has access to more than 45,000 full text journals and over 68,000 electronic books. Specifically, for the Forensic Science Program the most relevant electronic books are provided by CRCNetbase a multidisciplinary collection of e-books in the areas of Forensics/Law Enforcement, Biology, and Chemistry. Citations for peer reviewed articles are available through an interdisciplinary mix of databases such as American Chemical Society Publications, Science Direct, SpringerLink, Wiley Interscience, Biological Abstracts, Web of Science, MEDLINE, International Security & Counter Terrorism Reference Center, Criminal Justice Abstracts, Proquest Criminal Justice and Sage Premier. The Library provides 24/7 remote access to its collection of electronic resources.

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

A direct comparison of the MSFS Program budget with other natural science program budgets at SHSU is not possible. Although MS programs in chemistry and biology are offered at SHSU, they do not have distinct "program" budgets for their graduate degrees. Department budgets for Chemistry and Biological Sciences were \$404.8K and \$222K, respectively (see SHSU Budget – Natural Science FY13). However, these budgets support undergraduate programs in addition to the master's level programs. During the same year (FY13), the \$76.5K assigned to forensic science supported the MS Program exclusively.

FY	Operating Budget	% Change (FY 09)
2009	\$80,000	NA
2010	\$76,000	-5%
2011	\$75,000	-6.25%
2012	\$76,100	-4.9%
2013	\$76,500	-4.4%

Although it is unquestionable that the program receives solid institutional support, funding for operational expenditures over the past five years has decreased, in line with reduced institutional funding state-wide. Although this presents a challenge due to increased enrollment and increased costs of scientific consumables and supplies, the program has managed to remain effective and made use of alternative funding sources as a matter of necessity. Additional cost-cutting measures are expected to continue into the next fiscal year. The problem is compounded by limited external

research funding for many of the forensic science faculty and the financial demands necessary to support capstone research for a growing number of students. Although efforts to increase laboratory fees were supported at the College-level, they have not met with institutional approval to date. Laboratory course fees currently are \$8/student (<http://www.shsu.edu/gradcat/tuitionandfees.html>) compared with actual costs which run into several hundred dollars per student for some courses.

Administrative and technical support has been one of the program's major challenges over the past two years. Until very recently, the program had only one staff member who provides support (both technical and administrative). The program needs one full-time employee that is assigned exclusively to administrative support. This will relieve the Program Director of routine administrative tasks and allow the technical skills of the existing support staff to be maximised.

As a result of program growth and the use of space on the second floor by the Department of Chemistry, we have vastly outgrown the space allocated within the facility and are currently remodelling to accommodate additional faculty and staff offices. The program makes use of one large teaching laboratory for the majority of courses. This presents a scheduling issue and the lack of faculty research laboratory space is a formidable challenge when attempting to attract new faculty.

The addition of new faculty and the recent addition of administrative support personnel is a strong indication of the institution's support and commitment. However, a major drawback is the lack of research space and start up funds that can be offered to new faculty, making it very difficult for SHSU to compete with other FEPAC-accredited graduate programs.

Supporting Documentation Required for Standard 3.3:

- FS Budget 2013-2014
- Itemized List of Capital Equipment Purchases
- Student Travel Expenditures
- Student Financial Support Academic Year 12-13
- SHSU Budget – Natural Science FY 13
- Principal library holdings that support the program

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

- The institution recognizes the physical space limitations and the most recent Campus Master Plan includes a proposal to relocate the Forensic Science Department some time during the next five years.  
(<http://www.shsu.edu/~masterplan/documents/SHSUTechnicalReport-HighQualityPrint.pdf>).
- Effective June 2013, the Department of Forensic Science will receive one additional full time employee to assist with administrative support (training in progress).
- The program will renew efforts to increase lab fees for courses during the upcoming academic year.

**FEPAC Administrative Assessment Team Initial Comments:**

**Explain how the program meets that level of student research needs with the limited expense budget provided.**

**Program Response to Initial Comments:**

It has not been easy to meet the financial demands associated with student research with the limited expense budget. Despite the limited funds however, the program has clearly demonstrated success with respect to student research and publications. The program requested additional funds for FY14 and we anticipated being able to provide the new budget by the FEPAC deadline of Aug 15<sup>th</sup> but unfortunately SHSU has not yet released the budgets to individual departments or colleges. We are anticipating additional financial support and will provide this information to the on-site team during their scheduled visit.

We have been able to meet student research needs with limited institutional support due to external funding and grants. These funding streams are not reflected in the institutional expense budget. For example, many students have been involved in research on designer drugs, amphetamines and cathinones funded by the National Institute of Justice. These awards alone total almost \$700,000.

We have also benefited from smaller student research awards (typically \$3,000 – 7,000 per student) from organizations including the California Association of Toxicologists, Forensic Science Foundation and National Institute of Justice. In order for the program to continue to be successful, we must continue to attract and retain faculty with proven research capability. Institutional support is strong and is evidenced by faculty recruitment efforts, increased student financial support, hiring of additional administrative personnel and reclassification of technical support personnel to meet program needs.

Operating expenses were negatively impacted by overall decreases in education spending at the state level, rather than dwindling institutional support. Although we do expect to see an improvement in FY14, it is unreasonable to expect that all student research will be fully-funded at the institutional level. Tenure track faculty are encouraged and expected to develop active research programs that contribute to the academic and financial health of the program.

**On-Site Evaluation Team Assessment: *in compliance***

*The program is housed in a fairly new science building and possesses ample state-of-the-art instrumentation and microscopes. The physical space allocated to the program is at its maximum for the current program size, but with the anticipated doctoral program, more space will be needed to ensure that the Master's students continue to have adequate facilities and resources.*

*Strong institutional support was demonstrated through interviews with the College of Criminal Justice Dean (Vincent Webb), Dean of Graduate Studies (Kandi Tayebi) and Provost (Jaimie Hebert). When asked whether the program would continue to be supported in the future, the Provost replied "You've got to be kidding me—it's a terribly valuable program!" While budget documents for FY2014 showed the operating budget to be \$65,500, Dean Webb assured the team that the budgeted amount would actually be \$85,000 (up from \$76,500 in FY2013); salaries, travel, and capital equipment purchases are covered separately from the operating budget. In addition, he committed to finding necessary financial resources to cover any essential instrumentation repairs without requiring the program to use money from their operating budget, and proposed that if faculty were to take on additional duties (such as the advising currently performed by Dr. Kerrigan and the Administrative Coordinator Kelsie Bryand), they would receive credit toward their teaching load to ease their overall responsibilities.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

### Standard 3.4 Faculty

All faculty members shall be appropriately qualified, by education and experience, to implement the instructional program. The scientific and educational capabilities of the faculty should be distributed over the major areas of the program. Forensic science faculty includes any faculty or instructional staff member who teaches a forensic science course or a support course designed specifically for the program.

- The number of faculty members shall be sufficient to ensure regular offerings of all courses needed for the degree program. Students shall not experience delays in graduating because of lack of course offerings.
- Faculty members with working experience in a forensic science laboratory are preferred. However, over reliance on part-time or adjunct faculty members may be deemed inadequate institutional support.
  - Full-time faculty teaching in graduate programs shall have demonstrated research activity appropriate to their institution's mission.
  - At least 50% of the full-time forensic science faculty shall have an appropriate doctoral degree.
  - Full-time faculty members shall oversee all coursework and ensure its applicability to the program's mission, goals, and objectives.
  - At least 50% of the forensic-science credit hours in a program (4.3.1c / 4.3.1d or 4.3.2c / 4.3.2d for undergraduate programs and 5.3 for graduate programs) must be taught by full time faculty.
- The program shall have well-defined policies and procedures to recruit, appoint, and promote qualified faculty, to evaluate the competence and performance of faculty, and to support the professional development and advancement of faculty.

#### Program Response

##### **Description:** *(Briefly Describe how the Program meets the Standard)*

Four full-time faculty members teach forensic science courses or support courses designed specifically for the program (Drs. Kerrigan, Hughes-Stamm, Gangitano and Yu). A fifth faculty member will be added during the fall 2103 semester (Dr. Drake). The faculty are of sufficient number and diversity to ensure regular offerings of all courses required under the FEPAC standards. Faculty biosketches (attached) summarize the diverse expertise within the program. No student has experienced a delay in graduation due to course scheduling issues.

Dr. Bytheway oversees the Southeast Texas Applied Forensic Science (STAFS) Facility and teaches undergraduate courses in forensic anthropology. All six full-time faculty within the Department of Forensic Science have terminal degrees (PhD) within their discipline and all but Dr. Hughes-Stamm have relevant experience as forensic practitioners. Expertise among full-time forensic faculty covers a wide range of subjects including controlled substances, forensic genetics, toxicology, pattern evidence, CSI, trace, anthropology, quality assurance and laboratory management.

Full-time faculty oversee coursework and ensure its applicability to the program's mission, goals and objectives. Faculty within the College of Criminal Justice (with expertise in law) also support specific forensic science course offerings. Additional faculty within the College of Science (Departments of Biological Sciences and Chemistry) deliver graduate level courses that may be

selected by MSFS students as electives. The characteristics of faculty teaching forensic graduate students (core and electives) are summarized in an attachment (Faculty Instruction and Credentials). All faculty teaching core FS course have a PhD or JD. More than 50% of the forensic science credit hours required for the degree (44 graduate credit hours) are taught by full-time faculty. With the exception of FORS 5226 Law and Forensic Science, all core courses within the curriculum (36/44 credit hours or 84%) are taught by full-time forensic faculty.

Forensic faculty have remained stable over the past five years and most recently, experienced positive growth. Drs. Kerrigan, Bytheway, Gangitano and Yu were all full-time faculty in the program five years ago. One additional faculty member was added in Spring 2013 (Dr. Sheree Hughes-Stamm) and Dr. Jasmine Drake will join the graduate program during the fall 2013 semester. This represents a growth in forensic faculty from four during fall 2009, to six in fall 2013.

We anticipate additional faculty if a doctoral program proposal is approved by the Texas Higher Education Coordinating Board.

All full-time FS faculty at present have demonstrated research ability and are on the normative nine-hour teaching load: 0.75 FTE for teaching and a 0.25 FTE for research. Although the program has faculty with diverse experience and backgrounds in the core disciplines, we do utilize adjunct faculty for two specialized electives (FORS 6094 Questioned Documents; FORS 5114 Firearms and Toolmarks). These are newer elective offerings that were not offered five years ago. Although faculty offering these courses do not have doctoral degrees, they are experienced practitioners and subject matter experts from the Texas Department of Public Safety Crime Laboratory.

The program adheres to institutional policies and procedures to recruit, appoint, and promote qualified faculty as outlined in the Academic Policy Manual and Faculty Handbook (see attachments). Recruitment and appointment of faculty are described in Academic Policy Statement 800114 - Academic Instructional Staffing and 110511- Appointment and Evaluation of Chairs (attached).

Faculty are evaluated annually using a formalized Faculty Evaluation System. The Faculty Evaluation System (FES) recognizes three categories to assess performance: teaching effectiveness, scholarly and/or creative accomplishments, and service. An overview of the FES is given in Academic Policy Statement 820317 (attached). Additional institutional policies governing faculty performance and promotion are described in Academic Policy Statement 980204 - Performance Evaluation of Tenured Faculty and 900417 - Faculty Reappointment, Tenure, and Promotion. Until 2012 the Associate Dean in the College of Criminal Justice was responsible for performing annual evaluations on all Criminal Justice faculty, including forensic science. The Associate Dean provided oversight of program activities and the institutional assessment of the program (Online Assessment Tracking Database (OATDB) – attached earlier). Now this responsibility lies with the department chair, under the direct supervision of the Dean. Familiarity with the program's goals and objectives at this level ensures that faculty are evaluated within this context.

At the college-level, a Faculty Evaluation System Policy (attached) describes the specific activities and quantitative scores associated with performance. With the new creation of the Department of Forensic Science, this policy statement may be revised in the future to meet the specific goals and objectives of the forensic science program.

Teaching effectiveness and the ability to meet specific course goals and objectives are evaluated using the IDEA (Individual Development and Educational Assessment) system described earlier (Section 3.2). This assessment addresses the overall quality of individual courses. The IDEA Student Ratings of Instruction evaluates student learning based on specific objectives that are identified by the faculty/instructor. These ratings are considered during the annual evaluation as part of the FES under teaching effectiveness. At the program-level the postgraduate and curriculum surveys conducted annually provide more critical feedback related to our ability to meet specific program goals and provide effective faculty instruction.

All faculty are performing to the required standard and no specific changes have needed to be made with regard to faculty effectiveness. However, it became clear that as enrollment increased, faculty were severely challenged in terms of their ability to support student research to the extent that they had done so in the past. As a result, additional faculty searches were conducted (2011 – 2013). Although the faculty search in 2011 was not fruitful, two additional faculty members were recruited as full-time forensic faculty for the MS program in 2012 and 2013.

#### Part-Time Faculty

At present all core courses are instructed by full-time faculty within the College of Criminal Justice. Faculty in the College of Science instruct some of the elective courses. The Forensic Science Advisory Committee serves to bridge the gap between forensic science and pure science faculty between the two colleges. The Committee is comprised of members from both colleges. Members of the committee are familiar with the program's mission and provide feedback to faculty within their own department. The physical proximity to the departments of chemistry and biology make it relatively easy for faculty to collaborate with scientific colleagues, particularly those with overlapping interests.

The university recognizes that non-tenure track faculty, clinical, part-time, adjunct faculty and visiting scholars can enhance the instructional quality of the program. Guidelines for these appointments are described in Academic Policy Statement 890301 - Employment of Non-Tenure Track Faculty. The program has made use of a very limited number of part-time (adjunct) faculty. Adjunct faculty are provided an overview of the program's mission, goals and objectives by the program director at the time of recruitment. Full and part-time faculty work collectively to meet these goals, and despite the fact that adjunct faculty do not interact with full-time forensic faculty on a daily basis, interactions are evidenced by joint collaborative research projects.

#### Faculty Development

Institutional policies governing faculty development are described in Academic Policy Statements 800328 - Faculty Development Leave Policy, 900420 - Reassigned Time for Faculty Members Pursuing Research and Artistic Endeavors and 800215- Faculty Administrative Leave Program (attached). Additional guidelines are described in the Faculty Handbook which is located on the SHSU website at <http://www.shsu.edu/dept/academic-affairs/faculty-handbook/>.

Ongoing professional development resources for faculty are available and coordinated by the Professional and Academic Center for Excellence (PACE) (<http://www.shsu.edu/pace/>). They are responsible for creating, coordinating, and maintaining a variety of materials, programs, and activities to promote excellence among faculty, administrators and staff. Technology related training is provided year-round by our information technology group (IT@Sam). Faculty are provided with tools, resources and training designed to enhance their abilities to fulfill their respective roles. In April 2013 SHSU unveiled the first phase of a new professional development initiative for staff, referred to as "Talent Management". The new system will allow staff and



administrative personnel to chart a path for professional development and centralize training resources.

At the college and department level, professional development is supported and encouraged by actively participating in training, attending professional scientific meetings, inter-college research collaborations as well as academic-industrial partnerships. Most recently in February 2013, all five of the forensic science faculty attended and presented data at the American Academy of Forensic sciences Annual Meeting in Washington DC.

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

Although the number of forensic science faculty has been limited, it has not compromised our ability to offer core courses need for the degree program, or delay graduation. Rather, it limited our ability to offer specialized electives on an annual basis and placed a heavy burden on faculty with respect to the number of supervised research projects. In terms of faculty credentials and diversity, the program is most fortunate. Recent increases in full-time forensic science faculty demonstrate the high level of college and institutional support for the program.

As part of the annual Postgraduate Survey (attached), students are asked to evaluate faculty in terms of their motivation and knowledge within the discipline. Between 2007 and 2013 >90% of students were satisfied and numerical ratings were in the range 3.5 to 4.0 on a 0-4 point scale. According to the most recent survey of recent graduates, 71% of graduates were highly satisfied, 100% were satisfied or highly satisfied, and the numerical rating for faculty was 3.7 (Postgraduate Survey 2013, attached).

Additionally, students specifically comment on the quality and commitment of faculty in the Postgraduate Survey (2013):

“All of the professors are very supportive and interested in student success;

“... very helpful with networking at AAFS”

“Advisors genuinely care about their [research student] capstones”

“has given me knowledge that has impressed co-workers”

“A great faculty that really cares about student success. Also the course materials truly prepare students for careers and lifelong employment”

“Diverse, knowledgeable faculty”

However, students are also aware of the strain placed on faculty caused by staffing shortages. In the 2013 Postgraduate Survey, students list this as a program weakness. Comments from students also indicate they are aware that the heavy instructional loads placed on faculty have compromised courses in terms of organization and faculty preparedness. This was exacerbated by increased enrollment, the need for additional laboratory sections for several courses and the way in which faculty received workload credit for laboratory instruction. Nevertheless, IDEA ratings and Curriculum Survey data supports the fact that students feel they are delivered a rigorous curriculum that adequately prepares them for the workplace. The collection of this data over a seven year period demonstrates compliance with the standard and our commitment to improving standards on an ongoing basis.

Supporting Documentation Required for Standard 3.4:

- Full-time FS Faculty Biosketches

- Faculty Instruction and Credentials
- CVs – Full-Time Forensic Faculty
- Academic Instructional Staffing - Academic Policy Statement 800114  
[http://www.shsu.edu/~vaf\\_www/aps/documents/800114\\_001.pdf](http://www.shsu.edu/~vaf_www/aps/documents/800114_001.pdf)
- Employment of Non-Tenure Track Faculty - Academic Policy Statement 890301  
[http://www.shsu.edu/~vaf\\_www/aps/documents/890301.pdf](http://www.shsu.edu/~vaf_www/aps/documents/890301.pdf)
- The Faculty Evaluation System - Academic Policy Statement 820317  
[http://www.shsu.edu/~vaf\\_www/aps/documents/820317\\_001.pdf](http://www.shsu.edu/~vaf_www/aps/documents/820317_001.pdf)
- FES College of Criminal Justice Policy
- Performance Evaluation of Tenured Faculty - Academic Policy Statement 980204  
[http://www.shsu.edu/~vaf\\_www/aps/documents/980204.pdf](http://www.shsu.edu/~vaf_www/aps/documents/980204.pdf)
- Appointment and Evaluation of Chairs - Academic Policy Statement 110511  
[http://www.shsu.edu/~vaf\\_www/aps/documents/110511.pdf](http://www.shsu.edu/~vaf_www/aps/documents/110511.pdf)
- Faculty Reappointment, Tenure, and Promotion - Academic Policy Statement 900417  
[http://www.shsu.edu/~vaf\\_www/aps/documents/900417\\_010.pdf](http://www.shsu.edu/~vaf_www/aps/documents/900417_010.pdf)
- Faculty Administrative Leave Program - Academic Policy Statement 800215  
[http://www.shsu.edu/~vaf\\_www/aps/documents/800215\\_002.pdf](http://www.shsu.edu/~vaf_www/aps/documents/800215_002.pdf)
- Faculty Development Leave Policy - Academic Policy Statement 800328  
[http://www.shsu.edu/~vaf\\_www/aps/documents/800328.pdf](http://www.shsu.edu/~vaf_www/aps/documents/800328.pdf)
- Reassigned Time for Faculty Members Pursuing Research and Artistic Endeavors - Academic Policy Statement 900420
- Faculty Handbook available at:  
<http://www.shsu.edu/dept/academic-affairs/faculty-handbook/>
- Professional and Academic Center for Excellence (PACE)  
Available at: <http://www.shsu.edu/pace/>
- Faculty Instructional Workload - Academic Policy Statement 790601  
[http://www.shsu.edu/~vaf\\_www/aps/documents/790601\\_004.pdf](http://www.shsu.edu/~vaf_www/aps/documents/790601_004.pdf)
- FS Faculty Workload Request (Graduate Laboratory Instruction)  
[http://www.shsu.edu/~vaf\\_www/aps/documents/790601\\_004.pdf](http://www.shsu.edu/~vaf_www/aps/documents/790601_004.pdf)

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

The number of faculty has been the only issue and this will be remediated in full when the second of two new hires joins the program during the fall 2013 semester.

Additionally, a new faculty workload policy for forensic science faculty was recently approved by the Dean of the College of Criminal Justice due to the high number of instructional work hours associated with graduate laboratory instruction. This policy increases the workload credit that faculty receive for laboratory based instruction, in line with other Texas State Universities. It will effectively reduce total instructional hours for faculty to tolerable levels. See Academic Policy Statement 790601 - Faculty Instructional Workload (attached) and FS Faculty Workload (attached).

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment: *in compliance***

*The faculty are well qualified, engaged in relevant forensic research, and the number of full-time faculty (5) is sufficient to support the number of students enrolled (currently 29 in total). All full-time faculty have PhD's and all have forensic casework experience. The program utilizes a limited number of adjunct faculty for select elective coursework; all core courses are taught by the full-time faculty. Various written policies were provided that explain the faculty recruitment, appointment and promotion processes.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

### Standard 3.5 Student Support Services

The program shall provide adequate student support services, including mentoring, academic advising, and career and placement services. The program shall also provide an environment and culture that is congruent with professional standards and behaviors.

#### **Program Response**

**Description:** *(Briefly Describe how the Program meets the Standard)*

##### Institutional Support Services.

Students are made aware of institutional support resources during their initial orientation. MSFS students participate in orientation at the institutional level (Office of Graduate Studies), college and program-level. After completing an online orientation (prior to arrival), they participate in the on-campus orientation event provided by the Office of Graduate Studies.

At the institutional level students have a wide variety of support services and resources available to them. These can be found at <http://www.shsu.edu/services/> and include:

- Career Services – provides career assessments, mock interviews, cover letter and resume writing, job fairs, career counseling, presentations and workshops ([http://www.shsu.edu/~ccp\\_www/](http://www.shsu.edu/~ccp_www/))
- Student Advising and Mentoring (SAM) Center – provides advising and mentoring to set personal goals, establishing strategies to achieve objectives, enhance, improve academic performance ([http://www.shsu.edu/~sam\\_www/](http://www.shsu.edu/~sam_www/))
- Enrollment Management - responsible for attracting, enrolling, retaining, and graduating students (<http://www.shsu.edu/~enrollment/>)
- Student Services – coordinates a wide variety of student support services including but not limited to student legal and mediation services, counseling center, health center, services for students with disabilities, student activities, money management services, recreational sports, residence life etc. ([http://www.shsu.edu/~slo\\_stdss/](http://www.shsu.edu/~slo_stdss/))
- Information Resources – provides support for all technology related services on campus ([http://www.shsu.edu/~ucs\\_www/](http://www.shsu.edu/~ucs_www/))
- Counseling Center - <http://shsu.edu/dept/counseling/index.html>
- Newton Gresham Library - <http://library.shsu.edu/>

##### College-Level Student Support

The College of Criminal Justice houses a full-time graduate advisement office. This resource is available to all CJ students Monday-Friday, 8 am - 5 pm. A full-time graduate advisor assists students with registration, scheduling, activating computer accounts, applying for financial aid and general assistance. The college-level graduate student orientation is held at the beginning of the fall semester and is attended by forensic science students in addition to other CJ programs. This orientation covers a wide range of issues including but not limited to travel reimbursement guidelines, graduate student expectations, academic honesty & plagiarism, course scheduling, assistantships, payroll & insurance, academic grievance guidelines and policies. The College also provides annual meet and greet sessions that provide updates on travel reimbursement, conference registration and professional development opportunities. An example agenda is attached (CJ New Student Orientation).

### Program-Level Student Support

Students in the MSFS program also participate in a program-level orientation. This orientation addresses specific issues relating to the forensic science program such as required course work, stem work, scheduling, advising and resources, internships and research requirements, graduate labs, safety, facility issues and tour of the building. Bloodborne pathogen, chemical safety training and a mandatory workshop on scientific literature searches at the library are incorporated into the program-level orientation process. An example agenda is attached (FS New Student Orientation). Students are also provided a copy of the MSFS Student Handbook (attached) at the orientation. This handbook documents and reinforces information provided at the orientation meeting, and serves a quick reference for campus related issues and frequently asked questions.

At the beginning of the second year, students are also required to complete another MSFS Orientation. An example agenda is attached (FS Second Year Orientation). Students complete a full-time internship during the summer and for most students this serves as a true awakening. Student needs during the second year are quite different and the orientation focuses on the capstone course (independent research project), career goals, advising, the degree plan, remaining stem work and professional development issues. During this session students are motivated to think about where they will be in 5 years and encouraged to develop a plan to meet their goals during the upcoming year. Formal advising and individual meetings with the Program Director continue during the second year to ensure that students are prepared for graduation and address any issues.

All academic advising takes places at the program-level to ensure that students maintain adequate performance in core courses and select internships, research projects and electives that best suit their long-term career goals. Formally the Program Director meets individually with each student at strategic points during the program: to discuss the preferred area of specialization; selection of electives; internship preferences and proposed discipline for the capstone research. Because of the significant burden of core (required) courses, the electives, research project and agency/discipline for the internship play a critical role in tailoring the program to the student's individual needs and desired field.

By the second year, students have typically developed a strong sense of their chosen discipline, and support is principally focused on meeting their long-term career goals and professional development needs. The Program Director meets with students to discuss job applications, references, employment strategies and career goals on an ongoing basis. Faculty also provide informal support. Formally, the Program Director hosts a resume workshop for second year students at the beginning of the spring semester (typically in January). Current links and resources for job searches are also provided to students at that time. The Program Director has a follow up meeting (typically in March) to address the job application process, background checks, interview questions and related issues. Employment opportunities are routinely posted on the employment bulletin board outside the MSFS office suite and students are emailed employment opportunities by the Program Director, staff and faculty.

### **Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

Comprehensive student support services are provided at the university, college and program level. The MSFS program has developed effective procedures for orientation, advising, and the MSFS Handbook has been updated annually. The program also evaluates academic and non-academic support it its annual Postgraduate Survey. Numerical scores for academic support (2009-2013)

were 3.1 to 3.7, compared with 2.7 to 3.6 for non-academic support over the same range. Although 100% of students were satisfied or highly satisfied with both academic and non-academic support during the most recent survey (2013), overall scores and comments address the availability of faculty (time constraints) and faculty variability with respect to support. See Five-Year Survey Summary (attached).

One of the major challenges with respect to program-level advising has been the availability of the Program Director. Due to the small size of the faculty, the program director has assumed responsibility for this. Recent restructuring within the College of Criminal Justice, creation of the new Department of Forensic Science, additional faculty and an independent budget controlled at the department level, affords an opportunity for improvement. A new position, to provide day-to-day coordination of program activities and functions, as well as routine academic and non-academic advising, has been proposed and is currently pending institutional approval.

Formal and informal interactions with students encourage professional standards and behaviors. Full time forensic science faculty are accessible to the students and all virtually all have relevant experience in a non-academic setting such as a crime laboratory or medical examiner's office. According to the Postgraduate Surveys (2009-2013), 100% of students were satisfied that the program oriented them in professional values, concepts and problem solving ability. See Five-Year Survey Summary (attached).

Student support services provided at the university, college and program-level are sufficient to comply with Standard 3.4. The major strengths are the array of institutional support services available to students and the commitment of forensic faculty to help students meet their goals. The major weakness include the limited number of faculty to support students (until recently), high instructional workloads that prevent delegation of advising and other support activities to junior faculty, and limited administrative support staff to assist with programmatic activities.

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

In June 2013 the College of Criminal Justice reassigned one additional full-time support staff member to the Department of Forensic Science as part of the college-wide reorganization. This individual will assume responsibility for many routine administrative tasks that were previously performed by the program director and the existing forensic science staff member.

The original administrative support personnel within the Department of Forensic Science is in the process of reclassification. As part of this change in scope of work, first-line support and student advising will no longer be the sole responsibility of the Program Director. Transitioning these responsibilities will improve the availability of assistance, mentoring, resources and provide a coordinated approach to student support activities.

Supporting Documentation Required for Standard 3.5:

- CJ New Student Orientation
- FS New Student Orientation
- MSFS Student Handbook
- FS Second Year Student Orientation
- Five-Year Survey Summary

<p><b>FEPAC Administrative Assessment Team Initial Comments:</b> The Commission has no additional comments.</p>
<p><b>Program Response to Initial Comments:</b> The Program has no additional comments.</p>
<p><b>On-Site Evaluation Team Assessment: <i>in compliance</i></b></p> <p><i>The program provides adequate student support in the form of advising/mentoring and internship placement, as evidenced by discussions with current students and documentation of internships and high employment rate. The team found that the instructors provide an environment and culture congruent with professional standards and behaviors.</i></p>
<p><b>FEPAC Administrative Assessment Team Comments:</b> The Program is in compliance with the Standard.</p>
<p><b>Program Final Response:</b> The Program agrees with both the Review and the Assessment.</p>

**Standard 3.6 Recruiting and Admissions Practices, Academic Calendars, Catalogs, Publications, Grading and Advertising**

The program shall have policies and procedures for student recruitment and admissions that locate and select qualified individuals who have the educational prerequisites and the interest and motivation to pursue careers in forensic science. These policies and procedures shall identify the scientific background necessary and clearly define the expectations for admission to, continuation in, and completion of the program. In addition, the student shall be advised of the typical suitability requirements particular to employment in the field. Specifically, students should be advised that background checks similar to those required for law enforcement officers are likely to be a condition of employment (Reference: NIJ Report NCJ 203099 – “Qualifications for a Career in Forensic Science.” pp. 7-10).

All statements made about the program in any promotional advertising, catalogs, or other institutional publications shall be accurate.

The program shall ensure that all students receive timely and accurate information about the academic calendar, required coursework and degree requirements, grading policies and satisfactory academic progress, and other relevant academic policies.

All application, admission, and degree-granting requirements and regulations shall be applied equitably to individual applicants and students regardless of age, sex, race, disability, religion, or national origin.

**Program Response**

**Description:** *(Briefly Describe how the Program meets the Standard)*

Program admissions standards and procedures are described in the Graduate Catalog (<http://www.shsu.edu/gradcat/policies.html>) and specifically on the program website (<http://forensics.shsu.edu/about-us/admissions.html>) together with educational prerequisites and suitability requirements (<http://forensics.shsu.edu/about-us/careers.html>). Policies and procedures governing academic expectations and continuation in the program are defined at the institutional level in the Graduate Catalog (<http://www.shsu.edu/gradcat/degreerequirements.html>). The program website specifically addresses the importance of an undergraduate degree in one of the natural sciences and highlights specific undergraduate coursework recommendations which encompass those in the NIJ Report NCJ 203099 (<http://forensics.shsu.edu/home/careers.html>). The MSFS Program Brochure is also used to communicate important information to prospective students (attached). The MSFS Program Handbook and orientation events are also used to inform students about academic policies, degree requirements, grading policies and procedures. During the advisement process, students are made aware of the coursework requirements for specific disciplines (e.g. forensic DNA) or employers, so that they meet these requirements prior to graduation. As a condition of acceptance, many students are required to take undergraduate courses to help them meet these requirements.

Students have timely and accurate information relating to the academic calendar, required coursework, degree requirements, grading policies and academic expectations through the online Graduate Catalog, course syllabi, CJ graduate advisement office, interactions with the faculty, staff and Program Director.



The majority of information used to recruit students is available on our website. The MSFS Program has not had a marketing budget and has not engaged in aggressive recruiting or advertising efforts. As part of an institution-wide web optimization project, the Forensic Science website was recently updated (May 2013). Additional enhancements to the website that will serve as recruiting tools, are planned for Phase II of the web optimization project.

The information provided to prospective students is typically found on the website or in the MSFS Handbook. The vast majority of communications from prospective students are handled by the assistant to the director. All communications are documented and we encourage all potential students to visit the campus and meet with faculty wherever possible.

The program routinely engages in community-based activities, tours and demonstrations to students, civic groups and visitors. We also participate in off-site high school events, community events and the Career Day event at the George R. Brown Convention Center in Houston which hosts approximately 20,000 young people (age 13-17) each year. These community and volunteer events may not serve as formal recruitment, but they increase forensic science awareness and serve as good publicity for Sam Houston State University.

Twice annually we host a Forensic Science Open House as part of “Saturdays at Sam” – a campus preview day designed to expose potential students and their families to the wide array of programs and facilities at SHSU. The event is heavily focused on undergraduate programs, but there is always keen interest in forensic science. The event provides an opportunity to educate students about general admission requirements and the importance of an undergraduate science degree as the foundation for a career in forensic science.

Faculty and student attendance at scientific meetings also serves to promote the program’s academic standards. Each year the vast majority of MSFS students attend the AAFS meeting. Only those students presenting a paper receive financial support to attend the meeting. We have also participated in the annual AAFS Education Fair each year that it has been offered. This is our only formal recruiting event. Supplemental materials that have been used to attract potential students are attached. Next year we plan to participate in the Education Fair and host an alumni reception to broaden our exposure at the meeting.

For the past five years we have continued to focus on improving the academic strengths of the program rather than aggressive recruiting practices. Nevertheless, we continue to attract a healthy number of applicants which has allowed enrollment to grow. A five-year analysis of the admissions process and characteristics of applicants and admitted students was recently conducted.

**Analysis:** *(Discuss the Program’s Strengths and Weaknesses Related to the Standard)*

The program’s admissions policies and procedures are highly effective in terms of selecting qualified candidates. The MSFS Program collects data on the characteristics of applicants and admitted students. A five-year summary of admissions is attached (Five-Year Admissions Summary Report). The data presented summarizes applicant profiles, the number of applicants, and acceptance rates for the past seven years (2007-2013). Academic characteristics of admitted students are also shown over a thirteen-year period (2001-2013). The analysis shows that although the program continues to attract qualified candidates, the program is finding it increasingly difficult to compete with a growing number of accredited programs. On average 62% of

completed applicants receive an offer, although this number has been as low as 40% depending on the caliber of students.

Academic standards within the program have improved steadily and this is clearly a major strength. GRE scores over the last five years averaged 1149 (2009-2013), compared with 1099 during the first five years of the program (2001-2005). GRE scores show a similar increase, from a five year average of 3.49 (2009-2013) now, compared with 3.32 (2001-2003) at the outset. A weakness however is that the percentage of students that accept graduate placements at SHSU is lower now than five years ago (despite significant increases in student financial support). This reflects the highly competitive nature of forensic graduate programs, the increasing number of accredited programs to choose from, and the need to make continuous improvements and investments to attract qualified students and faculty. Resources and budget for recruitment and marketing purposes are limited. In order to attract more students, SHSU must dedicate additional resources to recruitment and marketing efforts in the future. A more detailed discussion of admission characteristics is presented under Standard 5.2.

Supporting Documentation Required for Standard 3.6:

- MSFS Program Brochure
- Graduate Catalog 2011-2013 available at:  
<http://www.shsu.edu/gradcat/toc.html>
- Student Handbook available at:  
<http://www.shsu.edu/students/guide/>
- Student Services and Resources available at:  
<http://shsu.edu/students/>
- Orientation agendas (see Standard 3.5)
- MSFS Program Handbook (see Standard 3.5)
- Five-Year Admissions Summary Report
- Program Fliers and Materials used for Recruitment

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

- Develop a comprehensive recruiting and marketing plan during 2014 to address the findings in the Five-Year Admission Summary.

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment: *in compliance***

*Admissions requirements/policies are listed on the program website and are appropriate for the degree. Although the topic of background checks is mentioned on the “Careers” page of the website and in the student handbook, the team also recommends it be added to the “Admissions” webpage.*

*Based on the program website, documents provided and student interviews, promotional advertising about the program appears to be accurate with the following exceptions:*

*--Advanced Forensic Toxicology, which is advertised on the website has not been offered for several years according to student interviews.*

*--The website advertises the program as “interdisciplinary” with a “multi-discipline approach” and “flexibility to tailor the degree to your specific needs and goals”. In discussions with current students and graduates spanning 5 year period, the team heard comments that the program is toxicology and DNA oriented. The students indicated they had limited exposure to other disciplines. The team recommends either increasing the scope and depth of the other forensic disciplines covered in the program or changing the website and other relevant advertisements to reflect the DNA and toxicology emphasis.*

*Generally, it appears that timely/appropriate academic information is distributed to the students during their enrollment.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

Based on the diversity of the curriculum offered, the faculty and Program Director were surprised at student feedback. In an effort to ensure that students did not feel limited in scope, the Program Director sought feedback on this issue at the Student-Director “Brown Bag Luncheon” in November. Students clarified that their observations regarding orientation towards DNA and toxicology were not rooted in the curriculum or course offerings, but rather *research*. Since the majority of sizeable externally funded (i.e. NIJ) grants at SHSU are in these two disciplines, students perceive this to be a program strength. However, a review of capstone research topics and disciplines over the past five years clearly shows that students select a diverse range of topics, disciplines and sub-disciplines – regardless of whether or not they are associated with external funding. Having explored in more detail the nature of the observations made by students, the Program agrees that they are in compliance with the Standard.

### Standard 3.7 Record of Student Complaints

The program shall have a procedure for handling student complaints. At a minimum, this procedure shall include informing students of their right to file a complaint with the institution and providing students with the institution's procedures for filing such a complaint.

The program shall maintain a record of all complaints it receives, as well as the resolution of those complaints. The program shall make this record available to members of the on-site evaluation team during the on-site visit. (*FERPA exception to accrediting organizations in carrying out their accrediting functions – see Legislative History of Major FERPA Provisions*)

#### **Program Response**

##### **Description:** (*Briefly Describe how the Program meets the Standard*)

Students are provided with a procedure to address any grievance they may have of an academic nature. This includes disputes over course grades, unauthorized class absences or tardiness, suspension for academic deficiency, and an instructor's alleged unprofessional conduct related to academic matters. These and other matters pertaining to an academic grievance are addressed specifically in Academic Policy Statement 900823, "Academic Grievance Procedure for Students".

The process for handling grievances is addressed in the Student Guidelines (<http://www.shsu.edu/students/guide/>). Students are made aware of the Student Guidelines and institutional policies regarding academic grievances during the orientation process.

##### **Analysis:** (*Discuss the Program's Strengths and Weaknesses Related to the Standard*)

There have been no academic grievances. However, the process of handling issues or concerns from students that have not yet risen to the level of a grievance or complaint per-se, could be improved.

During exit interviews with the program director students raised concern regarding the review of capstone research reports by the faculty advisor. The issue was not presented as a "complaint" at the time of the capstone report review, which prevented any action being taken to address the issue. Instead, students informed the Program Director of their unsatisfactory experience during the exit interview when it was too late.

The program actively solicits feedback from students during surveys and exit interviews. They are encouraged to be candid and provide critical responses because this allows us to identify areas of improvement.

Although there have been no grievances, the 2013MSFS Handbook will be updated to encourage students to inform the Department Chair of any issues or concerns as they arise. This will allow the program to be more proactive on issues that could potentially rise to a level of a complaint, will facilitate the timely resolution of any concerns, and allow situations that are unacceptable to be documented.

##### Supporting Documentation Required for Standard 3.7:

- *Student Grievance Procedure - Student Handbook - page 64*

<p><a href="http://www.shsu.edu/students/guide/">http://www.shsu.edu/students/guide/</a></p> <ul style="list-style-type: none"> <li>• Academic Grievance Procedures for Students - Academic Policy Statement 900823 <a href="http://www.shsu.edu/dept/academic-affairs/documents/aps/students/900823_001.pdf">http://www.shsu.edu/dept/academic-affairs/documents/aps/students/900823_001.pdf</a></li> <li>• Student Grievance Procedures and forms <a href="http://www.shsu.edu/~slo_www/std_grievance_proc.html">http://www.shsu.edu/~slo_www/std_grievance_proc.html</a></li> </ul>
<p><b>Plan:</b> <i>(Complete only if program has plans for enhancement or remediation)</i></p> <ul style="list-style-type: none"> <li>• Update the MSFS Handbook (2013)</li> </ul>
<p><b>FEPAC Administrative Assessment Team Initial Comments:</b> The Commission has no additional comments.</p>
<p><b>Program Response to Initial Comments:</b> The Program has no additional comments.</p>
<p><b>On-Site Evaluation Team Assessment: <i>in compliance</i></b></p> <p><i>A procedure is in place but no formal complaints have been filed to date.</i></p> <p><b><i>ASK ABOUT CAPSTONE RESEARCH REPORT REVIEW ISSUE</i></b></p>
<p><b>FEPAC Administrative Assessment Team Comments:</b> <b>The Program is in compliance with the Standard.</b></p>
<p><b>Program Final Response:</b> The Program agrees with both the Review and the Assessment.</p>

### Standard 3.8 Distance Learning and Other Alternative Delivery Mechanisms

FEPAC considers distance learning to be one of several acceptable forms of instructional methodology. Therefore, FEPAC does not maintain separate standards for distance learning or other alternative delivery mechanisms and expects all programs to meet the same standards for accreditation, regardless of the instructional methodology used.

FEPAC acknowledges that laboratory-based instruction is integral to any science-based discipline such as forensic science. Therefore, any program that offers at least some instruction via distance learning shall demonstrate that it includes an appropriate laboratory experience for all students.

<b>Program Response</b>	
<b>Description:</b> <i>(Briefly Describe how the Program meets the Standard)</i>	N/A
<b>Analysis:</b> <i>(Discuss the Program's Strengths and Weaknesses Related to the Standard)</i>	N/A
<b>Plan:</b> <i>(Not required for this Standard)</i>	N/A
<b>FEPAC Administrative Assessment Team Initial Comments:</b> The Commission has no additional comments.	
<b>Program Response to Initial Comments:</b> The Program has no additional comments.	
<b>On-Site Evaluation Team Assessment:</b> N/A	
<b>FEPAC Administrative Assessment Team Comments:</b> N/A	
<b>Program Final Response:</b> The Program agrees with both the Review and the Assessment.	

### **Standard 3.9 Success with Respect to Student Achievement**

The program shall demonstrate that its graduates have a basic foundation in the scientific and laboratory problem-solving skills necessary for success in a modern crime laboratory. The program may do this through the use of a formal, objective tool, such as the Forensic Science Assessment Test from the American Board of Criminalistics, or through other appropriate pre-graduation assessment measurements.

The program shall also document its record of student performance, as measured by post-graduate assessments, and any additional outcome measures the program may use to assess student progress and achievement. These records shall be maintained for at least five years after student graduation.

At least one measure of student achievement must be listed on the program's website. The measure(s) to be placed on the website are determined by the institution or program and should be updated annually. The measures of student performance listed on the program's website must also be listed on the annual report to FEPAC. (*FERPA exception to accrediting organizations in carrying out their accrediting functions – see Legislative History of Major FERPA Provisions*)

#### **Program Response**

##### **Description:** (*Briefly Describe how the Program meets the Standard*)

Students have a solid foundation in the scientific and laboratory problem-solving skills necessary for success in a modern forensic laboratory. The program evaluates student achievement and performance in a variety of ways, both pre and post-graduation. These include performance during the capstone experience, scientific research publications and presentations, participation in the Forensic Science Assessment Test (FSAT), employment success and feedback from employers who have hired MSFS graduates. These quantitative measures are evaluated annually and the program has maintained records for more than five years. The Five-Year Survey Summary report is attached.

In accordance with the standard, the program maintains two measures of student achievement on the MSFS website (<http://forensics.shsu.edu/student-success/achievements.html>). Postgraduate employment statistics and success with respect to scientific research and publications are updated annually at the close of each calendar year. The program maintains a database of student information pertaining to employment status and discipline. This data is used to update postgraduate employment rates, employer type and forensic disciplines in which our graduates find employment. The program also maintains a list of MSFS publications and although the papers listed include those of faculty and students, only publications of past or current MSFS students are counted for this measure. We consider a "publication" to be a publication in a peer-reviewed scientific journal or presentation of a paper at a national or international scientific meeting.

At the institutional level, performance measures maintained in the Online Assessment Tracking Database (OATDB) are attached for the last five years.

##### **Analysis:** (*Discuss the Program's Strengths and Weaknesses Related to the Standard*)

The results of the evaluation activities show that not only do MSFS graduates feel that they have the skills necessary for success in a modern crime laboratory, employers also agree that they are well-prepared for the workplace.

Over a five-year period, satisfaction rates of 100% were achieved on all virtually all measures. Employers of MSFS graduates are asked to evaluate their workplace preparedness and skills within one year of graduation. Satisfaction rates have remained high since the implementation of the new curriculum in 2006 and subsequent accreditation in 2009 (Class of 2008). Since 2007, more than 45 employers have completed the survey and 100% of respondents were either satisfied or highly satisfied that graduates were “adequately prepared for the workplace” and “had appropriate workplace skill”. In only one instance was the satisfaction rate less than 100% for “technical skills and knowledge needed for the job”. This was a 2008 survey (of 2007 graduates). The survey was for a student who was entering the firearms discipline and at that time, the program was not offering any instruction related to firearms. A full summary data analysis (Five-Year Survey Summary) are attached.

Postgraduate Survey	% Satisfied				
	2009	2010	2011	2012	2013
Provided me with skills and knowledge needed for a job in forensic science	100	100	100	100	100
Allowed me to acquire practical skills and apply this knowledge	83	100	100	100	100
Provided me with adequate hands-on or laboratory based skills	100	100	100	100	100
Oriented me in professional values, concepts and problem solving ability	100	100	100	93	100
Provided an environment where by students could integrate knowledge and skills	100	100	100	100	100

Employer Satisfaction Survey	% Satisfied				
	Survey Year	2008	2009	2010	2011
Graduation Year	2007	2008	2009	2010	2011
Technical skills and knowledge needed for the job	89	100	100	100	100
Ability to recognize and solve problems	100	100	100	100	100
Demonstrated an appropriate level of skill in the laboratory	100	100	100	100	100
Graduates with appropriate workplace skill	100	100	100	100	100
Graduates adequately prepared for the workplace	100	100	100	100	100

Students must take the Capstone course during their second year of study. The capstone course consists of an independent research project conducted over two semesters that should culminate in a body of work of publishable quality. Students must demonstrate advanced discipline-specific knowledge, investigation, and problem-solving ability in a thesis environment. The capstone course syllabus is attached, together with a list of capstone research topics for the past five years.



Students undergo a rigorous evaluation during the capstone experience. Evaluation forms that are used for this purpose are attached under Standard 3.2. Although all students have achieved satisfactory performance, performance has been highly variable. The final grade is comprised of the student's overall performance, oral presentation and the final written report. An evaluation of capstone performance over the last three years is attached. The most common performance limiting factor has been technical writing ability. Faculty feel there is still room for improvement, to the extent that efforts to address the issue are ongoing.

The two student performance measures that are reported on the program's website include postgraduate employment statistics and success with respect to scientific research and publications. Although this data is maintained current in a database, these external performance measures are published annually at the close of each calendar year. MSFS Publications and Postgraduate Success (attached) summarize this data.

The program maintains an excellent track record of disseminating research findings. In 2012 and 2011 there were a total of 16 and 15 publications arising from student research. The majority of publications are at scientific meetings, which are preferred by students because of networking and funding opportunities. Faculty are encouraged to focus on peer reviewed scientific journals, but limited faculty resources and teaching loads have stifled research output in terms of preparation of manuscripts and this has been a common sentiment among faculty, especially those who have supervised large numbers of students. Recent faculty hires will help address this issue.

Year	MSFS Publications (year-end) Journal articles and/or papers at national/international scientific meetings	Other Publications (Regional scientific meetings)
2012	16	-
2011	15	-
2010	13	1
2009	13	1
2008	7	2

Postgraduate success in terms of employment shows placements 90% or higher over the past six years. The most current data, including the graduating class of 2012 is shown below. Although the vast majority of students pursue careers in forensic biology and toxicology, an increasing number have pursued firearms. Most MSFS graduates are employed in publicly funded crime laboratories at the county and state-level. Employment within the private sector has been on the increase, as well as the number of students pursuing doctoral research.

Year	Employment Rate (%)
2006	100
2007	90
2008	92
2009	100
2010	91

2011	100
2012	93

Although the program participates in the FSAT, this information has been used principally to assess curriculum-related issues. Realizing that performance on this test is immensely variable between students, the FSAT is only an objective tool if the entire cohort participates. Unlike some programs who select only their best students to participate, virtually all SHSU graduates agree to take the examination annually. Summary results are attached.

Supporting Documentation Required for Standard 3.9:

- OATDB 2008-2009 through 2012-2013
- Five-Year Survey Summary (attached under Standard 3.5)
- Capstone Course Syllabus (attached under Section 3.2)
- Capstone Research Topics (2008-2013)
- Evaluation of Capstone Performance (attached under Standard 3.2)
- Summary of Student Capstone Performance
- MSFS Publications  
<http://forensics.shsu.edu/student-success/achievements.html>  
<http://forensics.shsu.edu/dotAsset/6a5f36b2-cc09-496a-b27f-8219bdfe446d.pdf>
- Postgraduate Success  
<http://forensics.shsu.edu/dotAsset/1fb34fea-bd55-4584-ac1e-0af4c6d4d274.pdf>
- FSAT Results (2009–2012)

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment: *in compliance***

*Success with respect to student achievement was evidenced by discussions with current students, successful internship placements for all students, FSAT scores and high employment rate for graduates. Post-graduate employment success is listed on the program website and was included in the documentation provided.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

### Standard 3.10 Professional Involvement

The program shall provide service to the forensic science profession and to the community through some combination of communication, collaboration, consultation, technical assistance, continuing education programs, and any other means it may have for sharing the program's professional knowledge and competence. The purpose of this involvement is to provide opportunities for faculty and students to contribute to the advancement of the field of forensic science, and to maintain program currency and credibility with practitioners and forensic science laboratory administrators.

#### **Program Response**

**Description:** *(Briefly Describe how the Program meets the Standard)*

The MSFS program contributes to the forensic science profession and to the community in a variety of ways. The program actively participates in research, which contributes to the knowledge base of forensic science, publishes scholarly research in scientific journals and at scientific meetings, collaborates with forensic laboratories and practitioners on research projects and internships, provides continuing education to the practitioner and educational community, and faculty actively contribute to the profession by participating on committees, boards and other professional activities.

Scholarly research undertaken by faculty and students contributes to the forensic science community. This information is disseminated to the scientific community in the form of journal articles and presentations at scientific meetings. A list of MSFS publications and presentations at forensic science professional meetings are attached.

Forensic faculty participate in, and direct training for laboratory/forensic personnel. The Southeast Texas Applied Forensic Science (STAFS) facility has provided training for forensic, law enforcement and high school educators over several years (<http://www.shsu.edu/~stafs/>). Current training opportunities are listed on the STAFS website (<http://www.shsu.edu/~stafs/training.html>). The MSFS program also hosted conferences for forensic science educators in 2009 and 2010. Faculty also provide training on forensic issues to the legal and law enforcement community on an ongoing basis through recognized organizations such as the State Bar of Texas, The Texas Center for the Judiciary, the Texas District and County Attorneys Association and the Drug Recognition and Evaluation Program. A comprehensive list of training events is attached (Summary of Professional Involvement).

Faculty are also engaged with the community through participation on technical advisory boards, scientific working groups, national forensic organizations, serving on editorial advisory boards of forensic and scientific journals, in addition to the Texas Forensic Science Commission and other professional activities.

During the graduate internship, MSFS students complete a 10-week full time job placement at an approved forensic laboratory. Many students complete a method development project or assist in the validation of a scientific procedure. This provides the student with an invaluable work-study experience, but also provides a valuable human resource to agencies that are extremely busy and may not otherwise undertake research projects. Ultimately these students provide a source of qualified employees to choose from. There are a large number of forensic laboratories in our region and our program makes a significant contribution in terms of providing a stream of well qualified forensic scientists to the workforce.

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

The program has an extensive network of professional relationships with the forensic community and its stakeholders. Strong and diverse academic-industrial partnerships now exist. These collaborations, research projects, training initiatives and other forms of engagement bolster the credibility of the program and the institution. The magnitude and scope of professional involvement (attached) clearly shows the program complies with Standard 3.10.

*Supporting Documentation Required for Standard 3.10:*

- MSFS Publications (attached under Standard 3.9)
- 2013 AAFS Presentations
- 2012 AAFS Presentations
- Compilation of MSFS Abstracts from Forensic Science Professional Meetings
- Summary of Professional Involvement

**Plan:** *(Complete only if program has plans for enhancement or remediation)***FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment: *in compliance***

*The program demonstrates professional involvement and service through the publication/presentation of research, training for forensic/law enforcement personnel at the STAFS facility, the appointment of Dr. Kerrigan to the Texas Forensic Science Commission, and other examples.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

**Standard 3.10a Interaction with Forensic Science Laboratory**

The program shall demonstrate formal, regular interaction with at least one operational forensic science laboratory. This interaction must be on-going and documented. This relationship must take the form of two or more of the following:

1. Student Internships;
2. Training opportunities where the program provides instruction to laboratory personnel;
3. Faculty serving on laboratory advisory committees;
4. Coordinated research initiatives between the laboratory and the academic program;
5. Professional activities coordinated between the laboratory and the academic program;
6. Laboratory personnel serving in an advisory capacity to the academic program.

**Program Response****Description:** *(Briefly Describe how the Program meets the Standard)*

The program formally interacts with numerous operational forensic laboratories. These interactions are on-going and documented. The program maintains an internship relationship with over forty forensic science laboratories nationwide as part of its internship program. Twenty-three of these agencies are in Texas and the remaining seventeen are located out-of-state. These organizations include private sector laboratories in addition to state, local and federal forensic science service providers:

**In-State Agencies**

Ameritox, LTD, Midland, TX  
 Austin Police Department, Austin, TX  
 Bexar County Forensic Science Center, San Antonio, TX  
 Bexar County Medical Examiner, San Antonio, TX  
 Brazoria County Crime Laboratory, Angleton, TX  
 Bryan Police Department, Bryan, TX  
 College Station Police Department, College Station, TX  
 Dallas County Medical Examiner, Southwestern Institute of Forensic Sciences, Dallas, TX  
 Galveston Medical Examiner's Office, Galveston, TX  
 Harris County Sheriff's Office (Firearms) , Houston, TX  
 Harris County Institute of Forensic Sciences, Houston, TX  
 Harris Medical Examiner's Office (investigation office), Houston, TX  
 Houston Police Department Crime Laboratory, Houston, TX  
 Integrated Forensic Laboratory, Euless, TX  
 Montgomery County Sheriff's Office, Conroe, TX  
 Sam Houston State University Regional Crime Laboratory, The Woodlands, TX  
 Texas Department of Public Safety- Austin Crime Laboratory, Austin, TX  
 Texas Department of Public Safety-Crime Lab, Corpus Christi, TX  
 Texas Department of Public Safety-Crime Lab, Garland, TX  
 Texas Department of Public Safety-Houston Regional Crime Lab, Houston, TX  
 Texas Parks and Wildlife Department-Law Enforcement Agency, San Marcos, TX  
 United States Customs and Borders Protection, Southwest Regional Science Center, Houston, TX  
 United States Drug Enforcement Administration, South Central Laboratory, Dallas, TX

**Out of State Agencies**

Aegis Sciences Corporation, Nashville, TN

Colorado Bureau of Investigation Crime Laboratory, Denver, CO  
 Colorado Bureau of Investigation Crime Laboratory, Pueblo, CO  
 County of San Diego, Medical Examiner's Office, San Diego, CA  
 Department of Safety-Concord, Concord, NH  
 Erie Co. Medical Examiners Office, Forensic Toxicology Laboratory, Buffalo, NY  
 Federal Aviation Administration, Civil Aerospace Medical Institute, Oklahoma City, OK  
 Los Angeles County Department of Coroner, Los Angeles, CA  
 Maricopa County Medical Examiner Office, Phoenix, AZ  
 Miami-Dade County Medical Examiner, Miami, FL  
 Montgomery County Ohio - The Miami Valley Regional Crime Laboratory, Dayton, OH  
 New York State Police Forensic Investigation Center, Albany, NY  
 North Carolina Office of the Chief Medical Examiner Toxicology Laboratory, Chapel Hill, NC  
 Office of the Chief Medical Examiner, Edmonton, Alberta Canada  
 Orange County Sheriff - Coroner Department, Santa Ana, CA  
 Florida Department of Law Enforcement, Pensacola, FL  
 Regional Forensic Science Center, Wichita, KS  
 San Diego Police Department, San Diego, CA  
 San Francisco Medical Examiner's Office, San Francisco, CA  
 Ventura County Sheriff (Forensic Sciences Laboratory), Ventura, CA  
 Washington State Patrol Forensic Laboratory Services Bureau, Seattle, WA

The program has also collaborated with operational forensic laboratories in on numerous research initiatives including:

- Collaborative research with the **Harris County Institute of Forensic Science**, Houston TX. Contreras PA, Houck SS, Davis WM, Yu JCC. Pyrolysis products of linear alkylbenzenes – implications in fire debris analysis, *Journal of Forensic Science*, 2011.
- Collaborative research with **Houston Police Department Firearms Section**: Stein D, Yu JCC. The use of near-infrared photography to image fired bullets and cartridge cases, *Journal of Forensic Science*, 2012.
- Collaborative research with the **US Customs and Border Protection (CBP) SW Regional Science Center** (Houston, TX) on chemical profiling of marijuana samples, 2012-present.
- Co-supervision Capstone Research Project Mr. Mounir Moudouni (Michael Donley, MS, **Harris County Institute of Forensic Sciences**, Houston, TX). QIASymphony® DNA Investigator Kit Validation for Casework DNA Extraction From Forensic Postmortem Tissue Samples, 2012.
- Collaboration with numerous forensic science service providers as part of Improved Detection of Synthetic Cathinones (“Bath Salts”) in Forensic Toxicology Samples. National Institute of Justice Award # NIJ 2012-R2-CX-K003, 2013.
- Collaborative research with the **California Department of Justice (Bureau of Forensic Services)** - Designer Amphetamines in Forensic Toxicology Casework: Analysis and Prevalence. Funded by the National Institute of Justice, Award #:2008-DN-BX-K126, 2008-2012.
- Collaborative research with the **Los Angeles County Medical Examiner** (Toxicology Laboratory) - Quantitative Analysis of Salvinorin A (Salvia) in Biological Samples. Funded by the National Institute of Justice (NIJ)/Forensic Sciences Foundation (FSF), 2009-2010.

- Collaborative research with **SHSU Regional Crime Laboratory**. Paige Hinners, BS, Monica Brady Mellon MS, and Sarah Kerrigan, PhD. Phenazepam Impairment: A Case Report. American Academy of Forensic Sciences Annual Meeting, Feb 2013, Seattle, WA.
- Collaborative research with the **Southwestern Institute of Forensic Sciences (Dallas County Medical Examiner's Office)**. Sarah Sims BS, Chris Heartsill BS, and Elizabeth Todd PhD. A Proposed Means for the Detection and Quantification of Bath Salts from Blood. American Academy of Forensic Sciences Annual Meeting, Feb 2013, Seattle, WA.
- Collaborative research with **Ameritox, Ltd.** Kayla N. Ellefsen, BSc\*; MacKenzie L. Willis, BS; Ayodele A. Collins, MS; James A. Bourland, PhD; Ronald C. Backer, PhD. Evaluation of the Immunalysis Tapentadol Enzyme Immunoassay Kit. American Academy of Forensic Sciences Annual Meeting, Feb 2012, Atlanta, GA.
- Collaborative research with **Ameritox, Ltd.** MacKenzie L. Willis, BS\*; Kayla N. Ellefsen, BSc; Ayodele A. Collins, MS; James A. Bourland, PhD; Ronald C. Backer, PhD. Validation and Comparison of the Microgenics and Immunalysis Buprenorphine EIA Kits. American Academy of Forensic Sciences Annual Meeting, Feb 2012, Atlanta, GA.
- Collaborative research with **Texas Department of Public Safety Crime Laboratory**, Austin, TX. Eduardo Padilla, BS; Sarah E. Martin, BS\*. Method Development and Validation for the Detection of Cannabinoids in Blood Using LC/MS/MS. American Academy of Forensic Sciences Annual Meeting, Feb 2012, Atlanta, GA.
- Collaborative research with the **Southwestern Institute of Forensic Sciences (Dallas County Medical Examiner's Office)**. Danielle A. Dela Cruz, BS\*; Chris Heartsill, BS; Jorn C.C. Yu, PhD. A Comparison of Alprazolam Levels in Blood and Urine. American Academy of Forensic Sciences Annual Meeting, Feb 2012, Atlanta, GA.
- Collaborative research with **Houston Police Department Crime Laboratory**. Mallory Foster, BS\* and Jorn Chi Chung Yu, PhD., and Darrell Stein. The Use of Infrared Imaging to Facilitate Fired Cartridge Case and Bullet Comparisons. American Academy of Forensic Sciences Annual Meeting, Feb 2011, Chicago, IL.
- Collaborative research with **Texas Department of Public Safety Crime Laboratory**, Houston TX. Laura L. Perrella, BS\*, and Jordan L. Williams, BS, Andrew McWhorter, MFS, and Jennifer Watson, MS. Optimizing Sperm Cell Recovery from Cotton Swabs prior to Christmas Tree Staining and p30 Test. American Academy of Forensic Sciences Annual Meeting, Feb 2011, Chicago, IL.
- Collaborative research with **Texas Department of Public Safety Crime Laboratory**, Houston TX. Jordan L. Williams, BS\*, and Laura L. Perrella, BS, Andrew P. McWhorter, MFS, and Jennifer Watson, MS. Optimization of Touch DNA Collection. American Academy of Forensic Sciences Annual Meeting, Feb 2011, Chicago, IL.
- Collaborative research with **Ameritox, Ltd.** Seongshin Gwak, B.S.\*, Ayodele Collins, M.S., Cade Park<sup>1</sup>, B.S., Scot Chester, B.S. and James Bourland, Ph.D. Prevalence of Norhydrocodone in Authentic Hydrocodone Urine Specimens. American Academy of Forensic Sciences Annual Meeting, Feb 2011, Chicago, IL.
- Collaborative research with **Ameritox, Ltd.** Emily Young\*, B.S., Ayodele Collins, M.S. and James Bourland, PhD. Evaluation of Enzymatic Hydrolysis Efficiency for Buprenorphine Analysis. American Academy of Forensic Sciences Annual Meeting, Feb, 2011, Chicago, IL.
- Collaborative research with **Houston Police Department Crime Laboratory**. Rebecca G Girardet, MD, Kelly Bolton, RN, William B Arnold, Breanna K Mead, Nicole Paes, Sheela Lahoti, MD, Reena Isaac, MD, Angelo Giardino, MD. The Collection of Forensic

Evidence from Prepubescent Victims of Sexual Assault. American Academy of Forensic Sciences Annual Meeting, Feb 2010, Seattle, WA.

- Collaborative research with **Austin Police Department Crime Laboratory**. Mario Galioto, BS\*, Diana Morales, MS, and Cassie Carradine, MS. Internal Validation of an Automated Extraction Robot. American Academy of Forensic Sciences Annual Meeting, Feb 2010, Seattle, WA.
- Collaborative research with **Ameritox, Ltd.** Chelsy Wingate, B.S.\*, Michelle Parras-Layton, M.S., Scot Chester, B.S., Cade Park, B.S., Israel Reyes, B.S., and James Bourland, PhD. Validation of Opiate Detection and Quantification in Human Urine Using Liquid Chromatography and Tandem Mass Spectrometry (LC/MS/MS). American Academy of Forensic Sciences Annual Meeting, Feb 2009, Denver, CO.
- Collaborative research with the **Brazoria County Crime Laboratory**. Jamie L. Jouett, BS\*. A Simple Liquid-Liquid Extraction of Carisoprodol and the Metabolite Meprobamate from Suspected Blood and Urine DUI Specimens for GC/MS Analysis. American Academy of Forensic Sciences Annual Meeting, Feb 2009, Denver, CO.
- Collaborative research with the **Miami Valley Regional Crime Laboratory**, Dayton OH. Jennifer M. Hogue, BA\*; Laureen Marinetti, PhD. GC/MS Method Development for the Quantitation of Quetiapine in Various Biological Specimens. American Academy of Forensic Sciences Annual Meeting, Feb 2009, Denver, CO.
- Collaborative research with the **Los Angeles County Medical Examiner's Office** (Toxicology Laboratory) Ridhima D. Rao, BS\*; Dan T. Anderson, MS. Postmortem Analysis of Buprenorphine/Norbuprenorphine From Whole Blood by GC/MS. American Academy of Forensic Sciences Annual Meeting, Feb 2009, Denver, CO.
- Collaborative research with the **San Francisco Medical Examiner's Office Crime Laboratory**. Ann M. Gordon, MA\*; Preston J. Wong, BS; Nikolas P. Lemos, PhD. PCP and Drug Impaired Driving in San Francisco, California. American Academy of Forensic Sciences Annual Meeting, Feb 2009, Denver, CO.
- Collaborative research with the **San Francisco Medical Examiner's Office Crime Laboratory**. Nikolas P. Lemos, PhD\*; Ann M. Gordon, MA; Preston J. Wong, BS. Driving Under the Influence of Methamphetamine in the City & County of San Francisco, California. American Academy of Forensic Sciences Annual Meeting, Feb 2009, Denver, CO.
- Collaborative research with **Harris County institute of Forensic Sciences**. Ashraf Mozayani, PhD, PharmD; William M. Davis, PhD\*; Luis A. Sanchez, MD; Colin C. Anderson, BS, Brake Pad Friction Particles: SEM-EDX Analysis and Comparisons to Gunshot Residue. American Academy of Forensic Sciences Annual Meeting, Feb 2009, Denver, CO.

Faculty also serve on advisory boards, committees, and participate in professional activities with operational forensic laboratories as described earlier (Summary of Professional Involvement).

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

A list of forensic science laboratories that have participated in the internship program by year (2007-2013) is attached. The program maintains relationships with these agencies for the principal purpose of graduate internship placements. Many of the agencies request interns on a regular basis, some requesting as many as 3 or 4 each summer. We have formal agreements and



memoranda of understanding with some of the agencies. However, many of the local or in-state agencies do not require a formal contract between the University and the agency. Student internship records and correspondence with the laboratory are maintained in the student's internship file in the MSFS office. The number of operational laboratories that participate in the internship program has grown annually. The program is highly responsive to student's geographical preferences and many out-of-state partnerships have been established over time.

There have been numerous coordinated research initiatives between MSFS students or faculty and forensic laboratories, including grant-funded research, internship research projects and other collaborations. Since 2009 there have been a total of 20 collaborative research projects between students and forensic laboratories that resulted in a paper or presentation at a national forensic science professional meeting (see Summary of Professional Involvement). This contributes to the advancement within the field, promotes the program's efforts and increases its credibility. Active participation in the field in terms of consultation on casework and professional activities ensures an ongoing involvement with practitioners and forensic science laboratories.

The two major strengths are the number and diversity of forensic science laboratories with whom we interact. This allows students to be placed at an agency based upon their personal preference, such as forensic discipline or geographical location. They have a wide selection of agencies to choose from. The program also works with students to incorporate additional agencies at their request, particularly if there is a need to accommodate a geographical preference or long-term employment goal. Finally, postgraduate employment opportunities are improved as a result of these positive interactions between the forensic laboratories and the program. Many of the agencies that contact the program annually to recruit graduates, also participate in the internship program and appreciate the quality of our graduates.

Supporting Documentation Required for Standard 3.10a:

- MSFS Internships by Year (2007-2013)
- Summary of Professional Involvement (attached under Standard 3.10)
- Internship documentation/files and MOUs are available for review on the MSFS Program Office.

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment: *in compliance***

*Numerous on-going and active relationships with forensic science laboratories were demonstrated, including student internships and coordinated research initiatives. However, it came to light during discussions with Dr. Kerrigan that several out-of-state agencies listed on the self-study do not have formal, regular or ongoing interactions with the program. Dr. Kerrigan explained that although no students had interned or collaborated with these labs to date, those labs had indicated a willingness to accept interns from the program.*

*In addition, Dr. Kerrigan currently serves as an appointed member to the Texas Forensic Science Commission.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

**Standard 3.10b Interaction with Forensic Science Organizations**

The program shall demonstrate formal, regular interaction with at least one professional forensic science organization.

**Program Response****Description:** *(Briefly Describe how the Program meets the Standard)*

The program demonstrates formal, regular interaction with professional forensic science organizations, principally the American Academy of Forensic Sciences and the Society of Forensic Toxicologists. This is achieved by presenting scholarly research at professional meetings and faculty participation within these organizations as board members, committee members, or active participants (e.g. presenters, moderators, workshop chairs). Faculty also interact with professional organizations within the stakeholder community, including the State Bar of Texas, The Texas Center for the Judiciary and the Texas District and County Attorneys Association. Sharing professional knowledge with these groups helps to integrate the complex legal and scientific issues that exist within forensic science.

In addition to regular attendance, participation and presentations at professional meetings, our faculty are also engaged with a variety of other forensic-related organizations including scientific working groups, editorial advisory boards of forensic and scientific journals, and the Texas Forensic Science Commission. These professional activities are summarized in the attachment.

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

The forensic organization with whom students and faculty interact the most is the American Academy of Forensic sciences. The program has contributed more than 30 papers to the Academy Proceedings in the last three years alone. MSFS publications and presentations at professional meetings are attached. The major strength is the quality, diversity and number of contributions, spanning forensic biology, toxicology, criminalistics, trace evidence and anthropology. The major weakness is that we do not participate with other organizations to the same extent, although this is not surprising given that the size and diversity of AAFS is unparalleled.

**Supporting Documentation Required for Standard 3.10b:**

- Summary of Professional Involvement (attached under Standard 3.10)
- 2013 AAFS Presentations (attached under Standard 3.10)
- 2012 AAFS Presentations (attached under Standard 3.10)
- MSFS Publications (attached under Standard 3.2)
- Compilation of MSFS Abstracts from Forensic Science Professional Meetings (attached under Standard 3.10)

**Plan:** *(Complete only if program has plans for enhancement or remediation)***FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment: *in compliance***

*Students and faculty regularly attend and/or present at the AAFS meeting. While the program is in compliance with this standard, the team recommends participation with additional organizations such as SAFS, SWAFS, SOFT, AFTE, IAI, etc.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

## Section 3 – STANDARDS FOR GRADUATE PROGRAM

### 5.0 GRADUATE PROGRAM STANDARDS

A graduate forensic science program shall provide advanced education in the scientific and laboratory problem-solving skills necessary for success in a modern forensic laboratory. Such a program shall combine rigorous scientific and laboratory training with exposure to the breadth of forensic science disciplines, including forensic science practice, law enforcement, and ethics.

#### Standard 5.1 Mission, Goals and Objectives

The graduate forensic science program shall have a clearly formulated mission appropriate to the institution and shall include teaching and learning, research, and service. The mission statement should be a clear and succinct representation of the program's purpose for existence, its philosophies, goals, and ambitions. The mission shall be appropriate to the institution and consistent with the goals and objectives of the forensic science community to produce a technically skilled and educated workforce. The goals and objectives shall be clearly specified, consistent with the mission, and appropriate in light of the degree(s) awarded.

#### **Program Response**

**Description:** *(Briefly Describe how the Program meets the Standard)*

##### Mission Statement

“Our mission is to provide Master of Science in Forensic Science students the knowledge, skills and abilities to prepare them for successful careers in forensic science. This mission is accomplished through academic coursework, hands-on experience in the laboratory, research and the completion of an internship in a forensic science laboratory”.

It is our aim to provide students with critical thinking ability, problem-solving skills and advanced discipline-specific knowledge. The Forensic Science Program at SHSU aspires to serve as a model of excellence in forensic science education and is committed to continuous quality improvement. In doing so, we hope to provide the forensic science community with not only competent and well-trained laboratory professionals, but individuals with the standard of training necessary to advance into leadership positions.

Our overall program goals are:

- To provide full support combined with continual improvement in the quality of education, scholarship and service in compliance with the mission of the university
- To develop an understanding of the areas of knowledge that are essential to forensic science
- To provide students with the practical skills, knowledge and problem solving abilities that will promote their advancement within the field of forensic science

We try to meet these goals by having specific, well defined and measurable objectives wherever possible. For example:

- Students will command detailed competence of core course material in forensic science
- Students will acquire practical skills in forensic science and apply this knowledge

- Students will be oriented in professional values, concepts, ethics and problem solving
- Students will demonstrate integration of knowledge and skills necessary for future success in the field of forensic science

The program's accountability in terms of meeting these goals is formally evaluated on an annual basis as part of the OATDB, the mechanism by which the University evaluates programs and activities campus-wide.

The program's current mission, goals and objectives were established in 2006 and are reviewed annually as part of the Annual Quality Review. Any proposed changes would require the approval of the Dean of the College of Criminal Justice.

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

The current mission, goals and objectives are adequate. They reflect the priorities of the institution to provide excellence by continually improving quality education, scholarship, and service to its students, and the program's aim to provide highly trained and competent individuals to the field of forensic science. There are no perceived weaknesses in the mission, goals and objectives or their review, which is an inclusive process that involves all faculty.

Supporting Documentation Required for Standard 5.1:

- The SHSU Mission statement can be found at <http://www.shsu.edu/catalog/mission.html>
- The MSFS Mission Statement can be found at <http://forensics.shsu.edu/academic-programs/program-overview.html>

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment:** *in compliance*

*The program has a clear and appropriate mission, goals and objectives based on documentation review and discussions with students and faculty.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

## Standard 5.2 Graduate Admission Requirements

**A bachelor's degree in a forensic or natural science, computer science, computer, electronic or electrical engineering, information systems, or information technology (or its equivalent coursework in a relevant field) shall be required for entrance into the appropriate graduate forensic science program. Undergraduate work should be evaluated to determine if the applicant has sufficient scientific or technical background to successfully complete the graduate program.**

### **Program Response**

**Description:** *(Briefly Describe how the Program meets the Standard)*

Institutional conditions for admission are described in the Graduate Catalog - <http://www.shsu.edu/gradcat/admission.html>):

An undergraduate GPA from the baccalaureate-granting institution of 2.5 (on a 4.0 point scale) or an advanced hours GPA of at least 2.8 from courses taken at the baccalaureate degree-granting institution is the minimum GPA needed to be considered for admission at SHSU. The minimum GPA may be waived for programs utilizing a sliding scale for admission consideration incorporating both the graduating undergraduate GPA and the admission test score.

Admission to graduate studies at Sam Houston State University and any of its sponsored programs is open to qualified individuals without regard to race, color, national origin, religion, gender, disability, or age.

Special requirements for admission to the MSFS Program include: (1) a bachelor's degree from a regionally accredited institution in chemistry or biology; or a bachelor's degree from a regionally accredited institution in a forensic or natural science with the equivalent of a minor in either chemistry or biology; (2) official transcripts of all academic coursework previously undertaken; (3) official test scores from the Graduate Record Examination; (4) three letters of recommendation with checklists, at least two from academic sources; (5) a personal essay of the applicant's career goals and aspirations; and (6) an application supplement listing pertinent undergraduate courses taken.

These can be found on the SHSU website at [http://www.shsu.edu/gradcat/fsci\\_ms.html#admission](http://www.shsu.edu/gradcat/fsci_ms.html#admission).

All completed applications are forwarded from the Office of Graduate Studies to the Forensic Science Advisory Committee for review. The Committee consists of faculty from the College of Science and the College of Criminal Justice. Committee members are appointed by the Dean of the College of Criminal Justice and represent Departments of Chemistry, Biological Sciences and the MSFS Program. The committee is chaired by the Forensic Science Program Director and by convention, includes among its members the current Department Chairs of Biological Sciences and Chemistry. The recommendations of the Forensic Science Advisory Committee are reviewed and approved by the College of Criminal Justice.

Members of the Forensic Science Advisory Committee (2013) are summarized in the attachment. The wide range of expertise within the committee ensures that all applicants are thoroughly evaluated in terms of their ability and potential in the areas of chemistry, biology, criminal justice and forensic science. When reviewing transcripts, committee members look for undergraduate courses that are likely to improve student success: quantitative analysis, instrumental analysis,

analytical chemistry, genetics, biochemistry, molecular biology, population genetics and statistics. Although not every course is required for admission, the committee evaluates each candidate in terms of the scientific rigor of their undergraduate experience. The program also states very clearly on the website that these undergraduate courses are helpful in pursuing a graduate degree in forensic science and routinely communicates this to potential applicants via the website (<http://forensics.shsu.edu/home/careers.html>), in written communications and the MSFS Brochure.

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

The MSFS Program collects data on the characteristics of applicants and admitted students. A five-year summary of admissions is attached. The data presented summarizes applicant profiles, the number of applicants, and acceptance rates for the past seven years (2007-2013). Academic characteristics of admitted students are also shown over a thirteen-year period (2001-2013). The analysis shows that although the program continues to attract qualified candidates, the program is finding it increasingly difficult to compete with a growing number of accredited programs. On average 62% of completed applicants receive an offer, although this number has been as low as 40% depending on the caliber of students.

Of the offers made to qualified candidates, an average 65% of the students accept. Although the percentage of students accepting offers has not dropped dramatically, acceptance rates are lower now than five years ago (despite increases in student financial support). This reflects the highly competitive nature of forensic graduate programs, the increasing number of accredited programs to choose from, and the need to make continuous improvements and investments to attract qualified students.

The admissions process is rigorous and the majority of students that are admitted are required to complete undergraduate stem work, for which they do not receive graduate credit. On average 53% of students are accepted conditionally upon completion of stem work, although this has been as high as 86% (2010).

Virtually all successful applicants have undergraduate degrees in either chemistry or the biological sciences. On average 47% of admitted students major in biology/biological sciences, while 38% major in chemistry or biochemistry. Majors in forensic science or other disciplines account for a very small number of successful candidates.

GRE scores over the last five years averaged 1149 (2009-2013), compared with 1099 during the first five years of the program (2001-2005). GRE scores show a similar increase, from a five year average of 3.49 (2009-2013) now, compared with 3.32 (2001-2003) at the outset.

The success of the program depends on its ability to attract qualified candidates. As the MSFS Program has evolved, the academic characteristics of the students accepted for admission has improved. Academic standards have increased with increasing enrollment (from 4 in 2001 to 17 in 2012), largely due to accreditation and institutional support.

Despite the high standards that we set our students, the program has not suffered from a high drop-out rate or academic failures. Since 2009 we have had just one academic failure. This took place recently (May 2013) when a student with a biomedical science degree failed to maintain institutional standards for GPA.

Supporting Documentation Required for Standard 5.2:



- Institution and program admission policies  
[http://www.shsu.edu/gradcat/fsci\\_ms.html#admission](http://www.shsu.edu/gradcat/fsci_ms.html#admission)
- Program admission policies  
[http://www.shsu.edu/gradcat/fsci\\_ms.html#admission](http://www.shsu.edu/gradcat/fsci_ms.html#admission)
- 2013 Forensic Science Advisory Committee
- Five-Year Admissions Summary

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment:** *in compliance*

*Based upon interviews and documentation review, the evaluation of applicants is thorough and appropriate for the degree awarded.*

**FEPAC Administrative Assessment Team Comments:**

The Program is in compliance with the Standard.

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

### Standard 5.3 Curriculum

The graduate program in forensic science shall offer a coherent curriculum that reflects the mission and goals of the program.

#### Standard 5.3.1 General Curricular Requirements

The curriculum shall, at a minimum, ensure that each student:

1. Develops an understanding of the areas of knowledge that are essential to forensic science.
2. Acquires skills and experience in the application of basic forensic science concepts and of specialty knowledge to problem solving.
3. Is oriented in professional values, concepts, and ethics.
4. Demonstrates integration of knowledge and skills through a capstone experience, such as a formal, objective tool (e.g., the ABC-Affiliate pre-certification process) or other comprehensive examination, thesis, and/or research project.

The program shall define clear learning objectives for each discrete component of the curriculum. The program shall have clear procedures for assessing and documenting each student's progress toward the fulfillment of these learning objectives and toward readiness for forensic science practice.

The program shall provide students with the basic knowledge necessary for effective testimony as an expert witness, and each student shall participate in practical experiences where they will render expert testimony, e.g., moot court.

<b>Program Response</b>
<p><b>Description:</b> <i>(Briefly Describe how the Program meets the Standard)</i></p> <p>The MSFS program requires the completion of 44 graduate semester hours of core and elective coursework that is completed during two years of full-time study. Students must take core courses that cover the fundamental forensic disciplines and topics. Students must also complete a 10 week full-time internship during the summer and an independent research project during their second year as part of their capstone experience.</p> <p>Because of the wide range of student backgrounds, majors and undergraduate courses, the majority of students complete undergraduate stem work while enrolled in the program. Students do not receive graduate credit for the completion of stem work. These stem courses are taken under advisement, or as a condition of admission.</p> <p>The program does not have formalized "tracks. During the advisement process we work with students individually to tailor the degree to meet their specific interests or career goals. Although students may join the program with a particular forensic discipline in mind it has been our experience that this focus often shifts, particularly as students develop a more realistic understanding of the profession. The program has sufficient flexibility to allow students with dual interests to tailor the program to their individual needs. This is accomplished in three ways: selection of specialized electives, an internship placement their preferred discipline, and selection of an independent research project with a faculty advisor in their chosen specialty.</p>

Students are required to complete 36 hours of core coursework and 8 hours of electives as follows:

		Credit Hours
Required	Courses	24
	Internship	6
	Research	6
Elective	Courses	8
TOTAL		44

### Typical Course Sequence

Year	Semester	Number	Required Courses	Credit Hours
1	Fall	FORS 5445	Forensic Instrumental Analysis (LAB)	4
1	Fall	FORS 5360	Pattern and Physical Evidence Concepts (LAB)	3
1	Fall	FORS 5446	Forensic Toxicology (LAB)	4
1	Spring	FORS 5440	Forensic Biology (LAB)	4
1	Spring	FORS 5335	Trace Evidence And Microscopic Analysis (LAB)	3
1	Spring	FORS 5117	Controlled Substance Analysis	1
1	Summer I/II	FORS 6371	Internship	6
2	Fall	FORS 6094	Forensic Science Capstone Course	3
2	Fall	FORS 5226	Law And Forensic Science	2
2	Spring	FORS 6224	Quality Assurance And Ethics	2
2	Spring	FORS 6094	Forensic Science Capstone Course	3
2	Spring	FORS 5116	Seminar In Forensic Science	1
Total core courses				36
Electives				8
TOTAL				44

The program maintains clear learning objectives for each component of the curriculum and these are documented in the course syllabi. A combination of advising and mentoring ensures that each student maintains institutional standards with respect to academic performance, has the opportunity to succeed, and makes progress toward employment readiness.

During the first year all students are enrolled almost exclusively in core courses. These courses are scheduled so that each student builds upon the scientific knowledge base. A typical course sequence is attached. For example, all students must complete the four credit forensic instrumental analysis course (FORS 5445) during their first semester. This course provides the foundation in analytical methodology that is absolutely necessary for more discipline specific course offerings. Topics such as CSI, pattern and physical evidence concepts (also taught during the first semester), lay a foundation for more advanced coursework where these principles or theoretical knowledge must be applied. Many students are required to take undergraduate molecular biology during the first semester, in readiness for the forensic biology course.

The first year is extremely challenging from an academic standpoint. Virtually all of the core courses have a three or four hour laboratory component. This ensures that students develop hands-on experience with scientific instrumentation and methods, well in advance of either the internship or the capstone experience.

During the internship, students are able to apply the knowledge, skills and abilities they have acquired so far in a workplace setting. The agency also provides exposure to real-world situations, ethical and professional issues that stimulates student interest. When students return from the internship they are fully engaged and most have a very clear idea of their long-term goals and objectives. Most students describe the internship as a true awakening, and report this to be one of their most valuable experiences in the program.

During the second year, students complete the remaining core courses including quality assurance/ethics, law/forensic science and the graduate seminar. They are also required to complete their independent research project (capstone course) and their specialized coursework (electives). The second year offerings form the basis of the specialization: selection of the appropriate research project/faculty advisor in the appropriate discipline, and selection of electives.

Professional values, concepts and ethics are formally integrated into the core curriculum. These are enhanced by the fact that virtually all full time forensic science faculty have real-world experience in the field, having worked in crime laboratories or medical examiner's offices. As a consequence, faculty tend to bring these experiences to the classroom on a regular basis. During the Law and Forensic Science course (FORS 5226) students participate in moot court. This takes place in an actual courtroom using criminal justice faculty with law degrees who have prior experience as trial attorneys, performing both direct and cross examination of students.

The program places strong emphasis on laboratory-based skills and this is reflected in the total number of laboratory hours per week. This allows students to practice and apply what they have learned and develop their lab skills and problem solving abilities. The integration of knowledge and skills culminates in the capstone research project, but this experience also provides students a rich opportunity for problem-based learning, technical troubleshooting, improvement in written and oral communication skills, project management, conflict resolution and personal development.

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

The curriculum meets the criteria listed in Standard 5.3.1. Of the 44 graduate semester hours required, students must complete 36 credit hours comprising of core scientific coursework, including their internship and research. We are aware that this exceeds the number of graduate semester hours required by many other programs. We believe that the broad focus and laboratory intensive approach of the core curriculum is a major contributor to postgraduate student success and employment statistics.

The major curriculum strengths include the large number of laboratory-based course offerings and the qualifications and experience of the faculty. Since the last assessment the program has developed a larger number of specialized electives covering a broad range of disciplines. The major challenges include the increased costs associated with laboratory-based instruction, student research projects and resources as a result of increasing enrollment and program growth. This was most apparent during the last academic year. Laboratory costs were significantly increased due to the cohort of 17 students. Unless operational funds increase with enrollment, the program will need to find ways to economize on laboratory-based expenditures, for example consolidating (eliminating) laboratory sections, or requiring group rather than individual laboratory work.

Supporting Documentation Required for Standard 5.3.1:

- MSFS Degree Plan and Course Sequence

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment:** *in compliance*

*The program curriculum promotes an understanding of forensic science and incorporates knowledge and skills required for a career in forensic science. Law, quality assurance and professional ethics are covered as part of the curriculum (FORS 5226 and FORS 6224). A courtroom on campus is utilized for mock testimony exercises. The program has a required Forensic Science Capstone course, which involves a program of research and the production of a written report of their data and conclusions.*

*One graduate of the program expressed that the Quality Assurance and Ethics class would be more beneficial if offered during the first year prior to the internship experience.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

## Standard 5.3.1a-d Specific Topic Requirements within the Curriculum

### 5.3.1a Core Forensic Science Topics

The following topics must be part of the curriculum:

Topic	Course ID	Course Name	Semester Hours	*Instructional Hours
Crime Scene Investigation	FORS 5360	Pattern and Physical Evidence Concepts	3 (course) 1 (topic)	90 (course) 30 (topic)
Physical Evidence Concepts	FORS 5360	Pattern and Physical Evidence Concepts	3 (course) 1 (topic)	90 (course) 30 (topic)
Law/Science Interface	FORS 5226	Law and Forensic Science	2	30
Ethics and Professional Responsibilities	FORS 6224	Quality Assurance and Ethical Conduct in Forensic Science	2 (course) 1 (topic)	30 (course) 15 (topic)
Quality Assurance	FORS 6224	Quality Assurance and Ethical Conduct in Forensic Science	2 (course) 1 (topic)	30 (course) 15 (topic)
Analytical Chemistry and Instrumental Methods of Analysis	FORS 5445	Forensic Instrumental Analysis	4	105
Drug Chemistry/Toxicology	FORS 5117	Controlled Substance Analysis	1	15
	FORS 5446	Forensic Toxicology	4	105
Microscopy and Materials Analysis	FORS 5335	Trace Evidence and Microscopic Analysis	3	90
Forensic Biology	FORS 5440	Forensic Biology	4	105
Pattern Evidence	FORS 5360	Pattern and Physical Evidence Concepts	3 (course) 1 (topic)	90 (course) 30 (topic)

*\*An instructional hour is a 50-min or 60-min class period. Instructional Hours = Number of instructional hours per week X number of weeks in the term (e.g. semester, quarter, trimester).*

The emphasis on each topic should be appropriate in light of the degrees awarded. However, a minimum of 10 instructional hours must be spent on each topic.

Normally, a topic will involve multiple class meetings and may involve multiple learning modalities, such as lectures, laboratories, and demonstrations. Evaluation of student mastery of each topic may be done through a number of modalities, but the topic material must be specifically addressed in a syllabus and assessed.

#### **Program Response**

**Description:** *(Briefly Describe how the Program meets the Standard)*

The MSFS curriculum covers each of the core topics required under Standard 5. 3.1a. The minimum number of instructional hours is exceeded for all topics. Some topics (e.g. pattern evidence, CSI and physical evidence concepts) are taught as one course. In those instances, the total credit hours and instructional hours are shown for the course and the individual topic. Multiple learning modalities are used including lecture and laboratory-based instruction. The instructional hours reflect the lecture and laboratory components of the course for a 15-week semester. The following required courses have mandatory laboratory sections (typically a four-

hour laboratory):

FORS 5360 Pattern and Physical Evidence Concepts  
 FORS 5445 Forensic Instrumental Analysis  
 FORS 5335 Trace Evidence and Microscopic Analysis  
 FORS 5446 Forensic Toxicology  
 FORS 5440 Forensic Biology

In as many courses as possible, evaluation of student mastery of the topic culminates in a practical examination, in addition to traditional written examinations and written assignments. The MSFS degree plan and typical course sequence are attached.

The program recently made a change to the course content and curriculum regarding FORS 5360 and FORS 5231 in response to student feedback over several years. Initially, pattern evidence and CSI were taught as two separate courses (each 3 credits). Physical evidence concepts were incorporated into both courses. Curriculum and Postgraduate Survey feedback indicated students did not want CSI to be a stand-alone course and that there was overlap in the content of the two courses. All three topics are now included in one three credit course to ensure that there is no overlap. The CSI course is still offered, but effective fall 2013 it will be offered as an elective, covering more advanced material.

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

All students, regardless of their area of interest or academic background must complete the core courses indicated above. This is necessary because students are admitted to the program with a wide-range of undergraduate majors. Core courses provide them with fundamental scientific understanding in instrumental analysis, drug chemistry, toxicology, forensic biology, trace evidence and microscopy, physical evidence concepts, pattern evidence, crime scene investigation, legal concepts, quality assurance and ethics. The core courses, internship and research project comprise 36 of the 44 graduate semester hours required to complete the program. The core courses meet and exceed the criteria of Standard 5.3.2.1. We believe the broad core curriculum and hands-on approach are critical for postgraduate success and future employment.

One of the major strengths relating to the rigorous core curriculum is that students are extremely well-rounded and qualified for employment within a wide range of disciplines. This is fortunate because many students with a desire to pursue a specific discipline change their mind after completing scientific coursework and the internship. The broad core curriculum makes it more likely that they will meet the needs of a future employer, should their focus or preferred discipline change during the program.

A weakness is the relatively small number of credits for specialized electives (8 credit hours). The program has made improvements to the curriculum that allow an increased number of credit hours (6 credit hours in 2009), but this is always at the expense of the core courses. Attempts to decrease the number of core course credits have not met with support by either the forensic faculty or the Forensic Science Advisory Committee. The historical consensus is that decreasing the core credit hours would undermine foundational knowledge and ultimately the scientific rigor of the program.

Supporting Documentation Required for Standard 5.3.1a:

- MSFS Degree Plan and Course Sequence (attached under Standard 5.3)
- Syllabi for required courses
  - FORS 5445 Forensic Instrumental Analysis
  - FORS 5360 Pattern and Physical Evidence Concepts
  - FORS 5446 Forensic Toxicology
  - FORS 5440 Forensic Biology
  - FORS 5335 Trace Evidence And Microscopic Analysis
  - FORS 5117 Controlled Substance Analysis
  - FORS 6371 Internship
  - FORS 6094 Forensic Science Capstone Course
  - FORS 5226 Law And Forensic Science
  - FORS 6224 Quality Assurance And Ethical Concepts
  - FORS 6094 Forensic Science Capstone Course
  - FORS 5116 Seminar In Forensic Science

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

**FEPAC Administrative Assessment Team Initial Comments:**

The program needs to answer the question asked and represent the data correctly in its table. The question is how many instructional hours are committed to the specific listed topic, not how many instructional hours does the entire course contain.

**Program Response to Initial Comments:**

The table originally presented listed instructional hours by course AND topic (shown in parentheses). For clarity in the revised table, we present instructional hours for topic only. In the original table we included lecture and laboratory components, in the revised table we exclude the laboratory hours. Nevertheless, for courses with a laboratory component, faculty instruct a three or four-hour laboratory each week in addition to the lecture hours. In the revised table we present only the instructional hours for the lecture component. At SHSU one instructional hour is equivalent to one hour of classroom instruction or three hours of lecture instruction. Courses taught during the long semester (fall/spring) operate on a minimum 15 week schedule.

Topic	Course ID	Course Name	Semester Hours	*Instructional Hours
Crime Scene Investigation	FORS 5360	Pattern and Physical Evidence Concepts	1	15
Physical Evidence Concepts	FORS 5360	Pattern and Physical Evidence Concepts	1	15
Law/Science Interface	FORS 5226	Law and Forensic Science	2	30
Ethics and Professional Responsibilities	FORS 6224	Quality Assurance and Ethical Conduct in Forensic Science	1	15
Quality Assurance	FORS 6224	Quality Assurance and Ethical Conduct in Forensic Science	1	15
Analytical Chemistry and Instrumental Methods of Analysis	FORS 5445	Forensic Instrumental Analysis	4	60



Drug Chemistry/Toxicology	FORS 5117	Controlled Substance Analysis	1	15
Drug Chemistry/Toxicology	FORS 5446	Forensic Toxicology	4	60
Microscopy and Materials Analysis	FORS 5335	Trace Evidence and Microscopic Analysis	3	45
Forensic Biology	FORS 5440	Forensic Biology	4	60
Pattern Evidence	FORS 5360	Pattern and Physical Evidence Concepts	1	15

*\*An instructional hour is a 50-min or 60-min class period. Instructional Hours = Number of instructional hours per week X 15 week semester).*

**On-Site Evaluation Team Assessment: *in compliance***

*The required topics are covered in the curriculum with at least the minimum number of instructional hours spent on each topic.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.

### 5.3.1b Courses in Specialized Areas

The curriculum must include graduate-level science courses appropriate to the specialization, track(s) and/or concentration(s) offered by that institution. For example, courses covering the topics of molecular biology and population genetics, advanced analytical chemistry, toxicology, and materials analysis may be appropriate.

Course ID	Course
FORS 5231	Techniques for Crime Scene Investigation (LAB)
FORS 5114	Firearms and Toolmarks
FORS 6094	Questioned Documents
FORS 5333	Forensic Anthropology (LAB)
BIOL 5305	Forensic Entomology
FORS 5261	Advanced Forensic DNA (LAB)
FORS 5215	Statistical Genetics
BIOL 5391	Advanced Genetics
FORS 6333	Behavioral Genetics
BIOL 5340	Electron Microscopy
FORS 6094	Advanced Forensic Toxicology
PSYC 5361	Neuropsychopharmacology
CHEM 5372	Advanced Biochemistry
CHEM 5368	Analytical Spectroscopy
FORS 6335	Advanced Forensic Chemistry

Program Response
<p><b>Description:</b> <i>(Briefly Describe how the Program meets the Standard)</i></p> <p>The program has significantly expanded its graduate offerings in specialized areas, from which students must select a minimum of eight credit hours. Students may choose from a total of fifteen courses covering a wide range of forensic disciplines and specialized science courses. Course numbers, titles and credit hours are shown in MSFS Degree Plan and Course Sequence (attached).</p>
<p><b>Analysis:</b> <i>(Discuss the Program's Strengths and Weaknesses Related to the Standard)</i></p> <p>Students have a wide variety of electives to choose from and there are adequate offering in physical, biological and chemical specializations to satisfy the major disciplines. Students prepare for these advanced-level courses by completing rigorous core coursework covering the major disciplines and fundamental scientific principles behind them. The program has made significant progress developing new electives in forensic science since the last assessment, and this continues. This year FORS 6333 (Behavioral Genetics) was approved and will be offered for the first time in Spring 2014. Questioned Documents (FORS 6094) was offered for the first time in Spring 2013 as a special topics course, and this met with such success that we will submit a formal request to create a permanent course during the 2013-2014 curriculum cycle.</p>

Other strengths include the small class size for specialized electives, faculty expertise across a wide variety of disciplines, and laboratory-intensive coursework. The program structure and course sequence is also a strength because students complete fundamental coursework in the core topics and the internship before embarking on the specialized electives.

Although there are an excellent number and scope of courses to choose from, the major weakness has been the number of course offerings due to limited faculty. The program has not had sufficient faculty to offer specialized electives on an annual basis. This has been a common criticism in Curriculum Surveys, Postgraduate Surveys and during exit interviews over several years. New faculty (hired in Spring 2013) and additional faculty beginning in Fall 2013 will alleviate this issue and allow us to offer a wider variety of electives on a continuous basis.

Supporting Documentation Required for Standard 5.3.1b:

- MSFS Degree Plan and Course Sequence (attached under Standard 5.3)
- Syllabi for specialized courses (electives)
  - FORS 5231 Techniques for Crime Scene Investigation
  - FORS 5114 Firearms and Toolmarks
  - FORS 6094 Questioned Documents
  - FORS 5333 Forensic Anthropology
  - BIOL 5305 Forensic Entomology
  - FORS 5261 Advanced Forensic DNA
  - FORS 5215 Statistical Genetics
  - BIOL 5391 Advanced Genetics
  - FORS 6333 Behavioral Genetics
  - BIOL 5340 Electron Microscopy
  - FORS 6094 Advanced Forensic Toxicology
  - PSYC 5361 Neuropsychopharmacology
  - CHEM 5372 Advanced Biochemistry
  - CHEM 5368 Analytical Spectroscopy
  - FORS 6335 Advanced Forensic Chemistry

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

- New forensic faculty hired in 2013 will allow for an expanded number of electives to be offered.

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment: *in compliance***

*The courses offered are appropriate. As reported in the response to Standard 3.6, the students indicated they had limited exposure to disciplines other than DNA and toxicology. The team recommends either increasing the scope and depth of the other forensic disciplines covered in the program or changing the website and other relevant advertisements to reflect the DNA and toxicology emphasis.*

**FEPAC Administrative Assessment Team Comments:****The Program is in compliance with the Standard.****Program Final Response:**

The Program reiterates the fact that upon further discussion with students, the comments related to DNA and toxicology focus pertain more to externally funded research opportunities, rather than curriculum. In fact, the list of advanced level electives covers a wide variety of disciplines including trace, entomology, anthropology, questioned documents firearms and toolmarks. The ability to offer an advanced elective depends on enrollment (minimum of five students) and faculty workload. Having explored in more detail the nature of the observations made by students, the Program agrees that they are in compliance with the Standard.

### 5.3.1c Graduate Seminar

A formal seminar, which is a requirement of a course, presented by invited experts, faculty, and/or students covering topics such as published work, original research, and other relevant topics must be offered.

<p><b>Program Response</b></p>	
<p><b>Description:</b> <i>(Briefly Describe how the Program meets the Standard)</i></p> <p>The graduate seminar in forensic science (FORS 5116) is a one-credit course taken during the spring semester of the second year. The purpose of the graduate seminar is to expose students to original research, new topics, or current issues in a wide variety of forensic disciplines. Students are given the opportunity to engage in active discussion about the different ongoing research. The seminar is intended to help the students apply their scientific knowledge to actual casework, assist with problem-solving, and broaden their scope of understanding. The graduate seminar should help to understand the scientific method, evaluate the different hypotheses, comprehend the relevance of the actual research and improve their scientific writing and oral presentation skills.</p>	
<p><b>Analysis:</b> <i>(Discuss the Program's Strengths and Weaknesses Related to the Standard)</i></p> <p>The seminar is effective in terms of exposing students to subject matter that would not necessarily be covered during other courses, developing critical thinking, written and oral communication skills. The seminar is now research-focused, and this change (from a practitioner/invited speaker format) was in response to feedback during the last FEPAC assessment. The weakness of this approach is that students do not get to engage with outside experts as much as they had in the past. Nevertheless, students interact extensively with practitioners during the internship and as part of collaborative research projects.</p>	
<p><b>Plan:</b> <i>(Complete only if program has plans for enhancement or remediation)</i></p>	
<p><b>FEPAC Administrative Assessment Team Initial Comments:</b> The Commission has no additional comments.</p>	
<p><b>Program Response to Initial Comments:</b> The Program has no additional comments.</p>	
<p><b>On-Site Evaluation Team Assessment: <i>in compliance</i></b></p> <p><i>A formal seminar course exists, which exclusively covers research. In contrast to feedback given by previous FEPAC assessors, this team recommends a return to the inclusion of forensic practitioners and other invited experts to contribute to the students' understanding of the forensic science profession.</i></p>	
<p><b>FEPAC Administrative Assessment Team Comments:</b> The Program is in compliance with the Standard.</p>	
<p><b>Program Final Response:</b> The Program agrees with both the Review and the Assessment.</p>	

### 5.3.1d Research

Each student is required to complete an independent research project. The research project shall culminate in a thesis or written report of publishable quality. The academic program must have written guidelines for the format of the thesis or report and for the evaluation of an oral presentation.

Each student is required to have a committee of at least three individuals who are responsible for mentoring the project. One member of the student's research committee must be a full-time faculty member of the program. The other two members can include full or part-time faculty, forensic practitioners, and others with specialized knowledge. At least one member of the committee must be external to the department sponsoring the research. In addition, each student must present the results of the work orally, in a public forum, before the committee. Presentations at professional meetings do not meet this requirement.

The research shall be conducted in an environment conducive to research and scholarly inquiry, and shall provide the opportunity for faculty and students to contribute to the knowledge base of forensic science, including research directed at improving the practice of forensic science.

#### **Program Response**

**Description:** *(Briefly Describe how the Program meets the Standard)*

All MSFS students must successfully complete an independent research project as part of their capstone experience. Students must conduct research and produce an article of scholarly writing that demonstrates advanced discipline-specific knowledge, investigation and problem-solving ability in a thesis environment. Students will have the opportunity and are actively encouraged to submit this work for publication and/or presentation at regional and national scientific meetings.

The specific objectives and goals are:

1. Learn to apply course materials to improve critical thinking, problem-solving, and decision making.
2. Develop specific skills, competencies, and points of view needed by professionals in forensic science.
3. Use a wide variety of resources to answer questions, solve problems, and manage a research project.
4. Stimulate intellectual effort, problem-solving ability and develop laboratory skills beyond those typically required.
5. Encourage independence and inspire students to set and achieve challenging goals.

The independent research project is conducted throughout the second year of study that culminates in a body of work of publishable quality. The research is conducted in a thesis-like environment under the direction of a committee comprised of the following: A faculty member in

the Department of Forensic Science serves as the *coordinator*, meeting with student(s) at designated intervals. The *coordinator* facilitates the capstone experience by helping the student identify a faculty member knowledgeable in the pertinent area. This individual, known as the *faculty advisor*, is typically a full-time faculty member within the College of Criminal Justice (Department of Forensic Science) or College of Sciences. The *faculty advisor* serves as the Chair of the committee. An outside expert willing to participate in the students' educational experience may serve as an *external advisor* with prior approval from the Program Director and *faculty advisor*.

The *faculty advisor* provides consultation and guidance to the student on an ongoing basis and assumes responsibility for monitoring progress and reviewing submitted materials by the specified timelines. Students will prepare a final written report and present the work orally in an open public forum at the end of the academic year.

Each student has a Capstone Research Committee, which is comprised of the *coordinator* and *faculty advisor(s)/external advisor(s)*. Each Capstone Research Committee consists of at least three members, one of whom must be external to the Department of Forensic Science. Collectively, the Capstone Research Committee provides guidance, an environment conducive to scholarly research, and assumes responsibility for assessment and evaluation of the work. The *faculty advisor* serves as Chair of the Capstone Research Committee.

Successful completion requires the student to demonstrate integration of discipline-specific knowledge and skills, problem-solving ability and effective written and oral communication. Guidelines regarding the written format of the report are described in the syllabus (attached) and evaluation forms are attached under Section 3.2.

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

The independent research provides students an opportunity to integrate knowledge, skills and abilities in an advanced setting. Moreover it allows both faculty and students to contribute to the knowledge base of forensic science and improving the practice of forensic science. A summary of research topics (2008-2013) is attached.

Contributions to the field of forensic science are evidenced by the number of scientific presentations and publications that arise from capstone research projects and this is a major strength. Other strengths include the diversity of faculty that allows for a broad range of research topics, cooperation and collaboration from academics outside of the Department of Forensic Science and personnel within operational forensic laboratories.

Weaknesses include (until recently) the small number of forensic faculty to supervise a large number of students. In some instances faculty served as the advisor and chair of as many as six students at one time. This placed an unrealistic burden on faculty in addition to their teaching responsibilities. Students communicated these frustrations in the Postgraduate Surveys, Curriculum Surveys and during exit interviews. Ultimately the issue has been resolved with the addition of two new forensic faculty. Lack of adequate research space, scientific resources, external funding and limited operation expenditures for the purchase of scientific supplies and consumables pose a real challenge.

Supporting Documentation Required for Standard 5.3.1d:

Capstone Research Topics (2008-2013)  
 Capstone Course Syllabus (attached under Standard 3.2)  
 Evaluation of Capstone Performance - Forms (attached under Standard 3.2)

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

The institution recognizes that the program has expanded beyond its current environment and a proposed relocation was recommended in the 2013 Master Plan.  
 Faculty will continue to be proactive with respect to grant-writing and external funding opportunities.

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment:** *in compliance*

*Based on student and faculty interviews as well as submitted documentation, the program is dedicated to promoting student research and meets all components of the standard.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:**

The Program agrees with both the Review and the Assessment.



### Standard 5.4 Program Director

The program director shall be a full-time employee of the academic institution appropriately qualified to provide leadership in forensic science education, research, and scholarly activities so that students are adequately prepared for professional forensic science practice. The program director shall meet the following requirements:

1. Minimum of an earned Doctorate degree appropriate for the forensic science program, AND at least five years relevant experience as an academic forensic scientist that includes appropriate educational, research, and service contributions to forensic science; OR at least five years relevant experience as a forensic-science practitioner, not including any training time in an operational forensic science laboratory setting,
2. Documented research experience in a forensic science discipline or in methods and techniques adapted, validated, and implemented by the forensic science community,
3. Documented managerial experience appropriate to the duties assigned to the position.

#### **Program Response**

**Description:** *(Briefly Describe how the Program meets the Standard)*

Dr. Sarah Kerrigan is Professor and Chair of the Department of Forensic Science. She oversees the forensic science program as a full-time faculty member of the College of Criminal Justice. She received a B.S. degree in Chemistry, Analytical Chemistry and Toxicology from the University of Hull in England. She conducted her postgraduate work in toxicology at the University of British Columbia in Vancouver, Canada where she received her Ph.D. in Chemistry in the area of psychedelic drugs. Dr. Kerrigan received her initial training in forensic toxicology twenty-three years ago at the Scotland Yard Forensic Science Laboratory in London, England. Between 2001 and 2004 she served as Bureau Chief for the New Mexico Department of Health, Scientific Laboratory Division where she was responsible for the blood and breath alcohol program in addition to forensic drug and alcohol related medical examiner and criminal casework statewide. Prior to this she worked for the California Department of Justice, Bureau of Forensic Services in Sacramento, CA as a forensic toxicologist and Quality Assurance Manager. Between 2009 and 2012 she served as the Laboratory Director of the SHSU Regional Crime Laboratory, an independent, accredited forensic laboratory in The Woodlands, TX. Over a period of fifteen years Dr. Kerrigan has served as a forensic scientist or laboratory director in ASCLD-LAB, ABFT and ISO/IEC 17025 accredited laboratories in the United States.

In 2011 Dr. Kerrigan served as the President of the Society of Forensic Toxicologists (SOFT). She has served on the Board of Directors of this national organization since 2006. Over a period of six years Dr. Kerrigan served on the Board of Directors of the California Association of Toxicologists where she held a variety of elected positions, including President (2004-2005). She has chaired several committees of the Society of Forensic Toxicologists and American Academy of Forensic Sciences including Membership, Awards and Scholarship, and Drugs and Driving. Dr. Kerrigan is a Fellow of the American Academy of Forensic Sciences and a member of the Scientific Working Group on Toxicology (SWGTOX). Between 2009 and 2011, Dr. Kerrigan served as a Commissioner on the Forensic Science Education Programs Accreditation Commission (FEPAC). In 2011 she was appointed to the Accreditation and Certification Interagency Working Group (IWG) of the National Science and Technology Council (NSTC) Subcommittee on Forensic Science (SOFS).

Dr. Kerrigan has been a contributing author in numerous forensic science textbooks including Encyclopedia of Forensic Science, Principles of Forensic Toxicology, Encyclopedia of Forensic and Legal Medicine, Medical-Legal Aspects of Abused Substances, Forensic Nursing, Clarke's Analysis of Drugs and Poisons, among others. She has published numerous scientific articles in peer reviewed scientific journals on a wide range of topics including designer drugs, impaired driving, breath testing, forensic alcohol determination, narcotic analgesics, psychedelics, GHB, prescription drugs and sexual assault. She was appointed to and serves on the Editorial Advisory Boards of both the Journal of Analytical Toxicology and the Journal of Forensic Sciences. Dr. Kerrigan served on the faculty of the National Judicial College in Reno, NV for almost five years and has worked closely with law enforcement, attorneys and the judiciary on forensic issues for over a decade. Dr. Kerrigan was the recipient of the Irving Sunshine Toxicology Award from the American Academy of Forensic Sciences in 2002. She was appointed to the Texas Forensic Science Commission by the Texas Attorney General in 2007, and currently serves as Vice Chair.

**Analysis:** *(Discuss the Program's Strengths and Weaknesses Related to the Standard)*

Dr. Kerrigan is a practicing forensic scientist with experience in forensic toxicology, quality assurance and crime laboratory management. Dr. Kerrigan has proven leadership and administrative abilities and she now brings this experience to SHSU's graduate program. Dr. Kerrigan meets the requirement of Standard 5.4 based on her prior experience, teaching, research and activity in the field of forensic science.

One of the major strengths that Dr. Kerrigan brings to the position is prior experience in crime laboratory management. As a former crime laboratory director, Dr. Kerrigan has a clear understanding of the knowledge, skills, abilities and personal attributes that are required by potential employers. In her role as program director, she aims to provide not only a rigorous and scholarly environment to develop these technical skills and abilities, but also foster the personal and professional growth necessary for future success.

Supporting Documentation Required for Standard 5.4:

- Curriculum Vitae – Dr. Sarah Kerrigan
- Program Director Job Description

**Plan:** *(Complete only if program has plans for enhancement or remediation)*

**FEPAC Administrative Assessment Team Initial Comments:**

The Commission has no additional comments.

**Program Response to Initial Comments:**

The Program has no additional comments.

**On-Site Evaluation Team Assessment: *in compliance***

*Dr. Kerrigan meets all aspects of this standard and shows a dedicated and enthusiastic interest in promoting the program and the forensic science profession.*

**FEPAC Administrative Assessment Team Comments:**

**The Program is in compliance with the Standard.**

**Program Final Response:** The Program agrees with both the Review and the Assessment.