Texas Higher Education Coordinating Board  
New Doctoral Degree Proposal

Directions: While completing this form, institutions should refer to Texas Administrative Code (TAC) 5.46 relating to Criteria for New Doctoral Programs. This form requires signatures of (1) the Chief Executive Officer, certifying adequacy of funding for the new program; (2) a member of the Board of Regents (or designee), certifying Board approval; and, if applicable, (3) a member of the Board of Regents (or designee), certifying that criteria have been met for Coordinating Board staff-level approval. Additional directions are available in the Guidelines for Institutions Submitting Proposals for New Doctoral Programs document found on the Coordinating Board web site. (www.thecb.state.tx.us/newprogramsandcertificates)

Note: If an institution does not have Preliminary Authority for the proposed doctoral program, it must first submit a separate request for Preliminary Authority. That request shall address criteria set in TAC Section 5.24 (b).

Information: Contact the Division of Academic Affairs and Research at (512) 427-6200.

### Administrative Information

1. **Institution**: Sam Houston State University.

2. **Program Name** – Doctor of Philosophy (PhD) in Forensic Science.

3. **Proposed CIP Code** – Include justification if the program title is not already included among the CIP classifications.

4. **Program Description** – The College of Criminal Justice is one of the leading colleges in the country, and the new degree in Forensic Science is a natural extension of the excellent work in Forensics already occurring in the College. The PhD in Forensic Science will require the completion of 86 credit hours beyond the bachelor’s degree. Students complete a total of 45 credit hours of core coursework, a minimum of 15 credit hours of dissertation research and an additional 26 credit hours of electives. The curriculum is designed to deliver an essential core curriculum in forensic science, together with specialized electives and research in the area of interest. Students are expected to fulfill the requirements during four to five years of full-time study.

   The educational objectives and mission of the PhD in Forensic Science are to provide students with the critical thinking ability, problem-solving skills, and advanced, discipline-specific knowledge to allow them to advance into leadership positions. This will be accomplished by demonstrating the ability to perform independent, original research, the successful completion of multidisciplinary academic coursework, hands-on experience in the laboratory, and collaboration with accredited forensic laboratories, institutes and partners.

5. **Administrative Unit** – The College of Criminal Justice.

6. **Proposed Implementation Date** – Fall semester, 2014/2015.
Program Information

I. Need

All proposals must include this section. If preliminary authority for the program was granted within the last four years, include updated information.

A. Job Market Need

Increases in Forensic Science Personnel

According to the most recent Census of Publicly Funded Crime Laboratories from the Bureau of Justice Statistics\(^1\), the nation's forensic laboratories employ approximately 13,100 full-time personnel and received an estimated four million requests for forensic services in 2009. The estimated budget for all publicly funded crime labs is about $1.6 billion, compared to $1.0 billion in 2002. Despite this increase, the August 2012 report shows a backlog of more than one million requests for forensic services in publicly funded crime laboratories throughout the United States. More disturbing however, is that nine out of ten requests at years end were classified as backlogged. The shortage of resources and qualified personnel to perform critical functions in support of criminal and death investigation has profound public safety and criminal justice consequences.

Forensic laboratories are a central component of criminal investigation and the administration of justice. Requests for forensic services are received from a variety of agencies, including law enforcement, medical examiners, correctional facilities, attorneys and the intelligence community. Publicly funded laboratories provide examination, reporting and testimony on physical evidence in criminal matters for state, county, municipal and federal jurisdictions. Due to the excessive backlog of cases there are now a large number of private forensic science service providers in the United States. According to the most recent census, 28% of publicly funded laboratories now outsource some forensic work.

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Forensic biology and toxicology are among the most outsourced forensic disciplines.

The scientific reliability of forensics and unacceptable backlogs have drawn widespread national and international attention. Recognizing the vital importance of forensic science and the need for significant improvements, Congress directed the National Academy of Sciences (NAS) to evaluate the current state of forensic science. In February 2009, the National Academy of Sciences released a pivotal report entitled Strengthening Forensic Science in the United States: A Path Forward\(^2\). The report states:

“The forensic science system, encompassing both research and practice, has serious problems that can only be addressed by a national commitment to overhaul the current structure that supports the forensic science community in this country. This can only be done with effective leadership at the highest levels of both federal and state governments, pursuant to national standards, and with a significant infusion of federal funds.”

In the years following the publication of the report, federal and state governments, professional and scientific organizations, scientific working groups (SWGs) and others have been addressing the myriad of scientific, budgetary and operational limitations faced by the forensic science community.

In order to address the shortfall in forensic science personnel, the Bureau of Justice Statistics estimated the percent increase in full-time forensic scientists needed to eliminate backlogs and prevent their recurrence\(^3\). DNA accounts for the largest increase in examiners, requiring an estimated 73% increase in qualified personnel. Biological screening (serology) accounted for the next highest increase (57%), followed by firearms and toolmarks (46%) and trace evidence examiners (43%). The estimated increases in personnel are staggering and all disciplines, including controlled substances and toxicology are affected by these massive shortfalls (Figure 1). The NAS report highlights in particular the need for integrated governance, national standards and a significant infusion of federal funds to address these issues.

\(^2\) National Academy of Sciences, Committee on Identifying the Needs of the Forensic Sciences Community, National Research Council, 2009.

Additionally, because this is a new and growing field, the US Labor and Statistics Bureau and the Texas Workforce Commission keep statistics only on Forensic Science Technicians. This field is growing with a rate of change of about 19%. The Occupational Outlook Handbook estimates approximately 13,000 jobs and a change of 2,400 jobs between 2010-2020 for Forensic Science Technicians. The need for forensic scientists and those who oversee these technicians will need to grow as well. In February 2013, the U.S. Attorney General established the National Commission on Forensic Science. This commission is specifically charged with “identifying and assessing the current and future needs of the forensic sciences to strengthen their disciplines and meet growing demand”.

In addition to the burgeoning demand for routine forensic examiners within the criminal justice system, there is also a pressing need for forensic science researchers and faculty. The Forensic Science Education Programs Accreditation Commission is the sole accrediting body for undergraduate and graduate forensic programs within the United States. These accreditation standards require full-time forensic faculty to have an appropriate doctoral degree and relevant research experience, in addition to work experience or familiarity with an operational forensic laboratory. The pool of qualified faculty with a doctoral degree is extremely limited. This is evidenced by several factors: applicant pools have always been extremely small; our 2011 faculty search at SHSU failed to identify any qualified candidates whatsoever; and although our 2012 search was successful, there were no qualified applicants from the United States, which meant that we had to advertise internationally and recruit faculty from Australia. As the emphasis on fundamental forensic science research and education grows, the PhD in Forensic Science at SHSU will help meet the job market needs of the criminal justice system, research and higher education.

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4 Federal Register, 78 FR 12355, 12355 -12356.
Importance of Forensic Science Education

The report to Congress recognized however, that increasing the number of scientists is only part of the solution. Education in forensic science and the need to deliver forensic scientists with appropriate training, education and experience to the workplace, received particular attention. The NAS report recognized an urgent need to provide high quality interdisciplinary education and training in forensic science. Specifically:

Recommendation 10:

“To attract students in the physical and life sciences to pursue graduate studies in multidisciplinary fields critical to forensic science practice, Congress should authorize and appropriate funds to the National Institute of Forensic Science (NIFS) to work with appropriate organizations and educational institutions to improve and develop graduate education programs designed to cut across organizational, programmatic, and disciplinary boundaries.”

They clearly recognized the role of academia with respect to the advancement of technologies used in forensic science, the validation of existing science and methodology that has recently been called into question, and the ability to deliver highly trained and well prepared professionals to the workplace. The coordinated effort to address the shortfalls and limitations of forensic science makes it all the more important that higher education is able to deliver graduates, not only with requisite knowledge and skills in forensic science, but also the ability to assume leadership roles within these organizations. Only with effective leadership in place, can these organizations (government, academia, public and private sector laboratories) make this much needed transformation possible.

The multidisciplinary doctoral program in forensic science will fulfill that role and continue the existing mission and success of the Forensic Science Program at SHSU. The PhD in Forensic Science will provide students with the critical thinking ability, problem-solving skills, and advanced discipline-specific knowledge to allow them to assume leadership positions within forensic organizations.

Forensic science education continues to be in the forefront of legislative efforts at the Federal level. In July 2012, testimony before the United States Senate Committee on the Judiciary addressed the need for continued advancement of forensic science through rigorous academic programs. The importance and role of the Forensic Science Education Programs Accreditation Commission (FEPAC) was specifically addressed. FEPAC is the barometer by which all educational programs should be measured, and ensures that the highest quality opportunities are provided.

Forensic Reform – Education & Research

Since the publication of the NAS Report in 2009, the Federal government and Congress made a significant effort to address the needs of the forensic science and the criminal justice stakeholders who rely upon its validity. A critical component of this effort involves

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5 The Forensic Science and Standards Act of 2012 (S 3378); The Criminal Justice and Forensic Science
the promotion of research and the development of a national research strategy. Proposed legislation for forensic science reform or “advancement” calls for funding to support forensic science research.

Reform legislation also calls for the education and training of judges, attorneys, and law enforcement personnel in the forensic sciences: Specifically, training in fundamental scientific principles to allow them to competently use and evaluate forensic science evidence; and development of a standardized curriculum for education and training. Section 602 of the Criminal Justice and Forensic Science Reform Act of 2011 also addresses the need for continued development of undergraduate and graduate educational programs in the forensic science disciplines and related fields. As a recognized leader in forensic science and criminal justice education at the nation level, Sam Houston State University is in a strong position to expand its academic program in forensic science to include doctoral-level education, and deliver forensic training to stakeholders as proposed by Congress.

Reform legislation also calls for a national research strategy, grants and funding, oversight, and the need for public-private collaboration. Proposed legislation calls for a comprehensive strategy and agenda to foster and improve peer-reviewed scientific research and to address issues of accuracy, reliability, and validity in the forensic science disciplines. This is to include funding for competitive grants to promote collaboration between academic institutions and accredited forensic science laboratories, and the development of new technologies and processes to increase the efficiency, effectiveness, and accuracy of forensic testing procedures. The existing Master of Science in Forensic Science at SHSU currently partners with over 50 agencies and accredited forensic science service providers in Texas and throughout the United States. The existing collaborations exist principally in support of the internship program, but also as part of federally funded forensic science research projects at SHSU. The breadth and scope of this grant-funded research highlights the interdisciplinary nature of the research at SHSU that exists currently, and the collaborative nature of the work. Sam Houston State University is in a strong position to further develop relationships with forensic science laboratories, both public and private, in an effort to expand and optimize collaborative research between academia and accredited laboratories.

B. Existing Programs

History

Forensic science is an analytical science requiring good observation skills, uses a wide range of analytical technologies, and requires critical skills in data analysis and interpretation. However, forensic science education has been greatly influenced by the popularization of forensic science in the media since 2000, due to television shows such as “CSI” (Crime Scene Investigation). Although forensic science has long been an area of public interest and intrigue, the extraordinary success of television shows like this led to a generation of students seeking a career in forensic science due to its glamorous portrayal by the media. An unfortunate consequence of the “CSI-effect” is a demand for forensic education by students who are poorly informed and ill equipped to tackle the level of scientific rigor demanded by

Reform Act of 2011 (S 132).
high-quality programs. From 1977 to 2002, there was an inclusive average of 1.3 new forensic programs per year among universities in the US, which represents a very nominal increase. In contrast however, between 2002 and 2007, a total of 110 new programs were created, representing an unsustainable average of 22 new programs annually\(^6\).

**Accreditation**

As a result of the proliferation of programs nationally, the US Department of Justice released a report in 2007 entitled “Addressing Shortfalls in Forensic Science Education”. The report highlighted the lack of a standardized forensic science curriculum, which created a problem for students, future employers and the criminal justice system as a whole\(^7\). The lack of nationally recognized standards and exposure to forensic science through the media resulted in many graduates having unrealistic expectations and insufficient scientific exposure to competently perform their work. In 2001, the National Institute of Justice (NIJ) took steps to address the problem and in 2004, published landmark recommendations on education and training in forensic science\(^8\). After the recommendations were published the American Academy of Forensic Sciences (AAFS), a professional association devoted to improving and achieving justice through science, stepped forward to develop an academic accreditation program for forensic science. With financial assistance from both the NIJ and AAFS, the Forensic Science Education Programs Accreditation Commission (FEPAC) was established in 2003.

The mission of FEPAC is to maintain and to enhance the quality of forensic science education through a formal evaluation and recognition of college-level academic programs. The primary function of the Commission is to develop and to maintain standards and to administer an accreditation program that recognizes and distinguishes high quality undergraduate and graduate forensic science programs. The Commission consists of both academicians and practitioners alike. The creation of a standard for measuring the quality of forensic science education programs allows students to identify the highest caliber programs, and as the number of students from accredited programs increases, more job applicants meet the requirements of forensic science service providers. Since 2003, the FEPAC standards have been revised and strengthened eight times. Educators recognize that FEPAC accreditation is difficult\(^9\), but realize that it affords them access to higher quality and more competitive students. Today, FEPAC is recognized by the Association of Specialized and Professional Accreditors (ASPA) and the Council on Higher Education Accreditation (CHEA). It is recognized nationally and internationally as the sole accrediting body for both undergraduate and graduate (MS-level) forensic science programs.

The Forensic Science Master’s degree at Sam Houston State University was the first in Texas to be accredited by FEPAC. Although the Master of Science in Forensic Science (MSFS) was

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program began in 2001, investments in capital equipment, faculty, curriculum and a state-of-the-art scientific building in 2006 allowed the program to make progress towards its accreditation goals. In 2009, the MSFS Program at SHSU was the only graduate program in the nation to achieve full five-year accreditation status. At that time it was one of just seven accredited graduate programs in the United States and has been recognized as a leader in forensic science education ever since. The current Department Chair of Forensic Science was the architect of the MSFS program curriculum in 2006, and is a former State Laboratory Director and FEPAC Commissioner.

The number of FEPAC-accredited programs has grown steadily since 2003. There are now 19 MS-level accredited programs in the US (Table 1) and 18 at the Bachelor’s level. Since 2003, graduate program growth outpaced accredited undergraduate forensic science programs. This may be in large part due to employer preference for undergraduate majors in natural science (rather than more specialized degrees), the growing desire for a more qualified and credentialed forensic scientist to withstand the scrutiny of the courts, and the highly competitive nature of the field.

Table 1. FEPAC-accredited MS Programs in Forensic Science (2012).

<table>
<thead>
<tr>
<th>MS Degree</th>
<th>Institution</th>
<th>Department/Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Science in Forensic Science</td>
<td>University of Alabama at Birmingham (AL)</td>
<td>Forensic Science Program</td>
</tr>
<tr>
<td>Master of Science in Forensic Science</td>
<td>Arcadia University (PA)</td>
<td>Forensic Science Program</td>
</tr>
<tr>
<td>Master of Science in Biomedical Forensic Science</td>
<td>Boston University School of Medicine (MA)</td>
<td>Department of Anatomy and Neurobiology</td>
</tr>
<tr>
<td>Master of Science in Forensic Science</td>
<td>University of California at Davis (CA)</td>
<td>The Interdisciplinary Forensic Science Graduate Group/Forensic Science Graduate Program</td>
</tr>
<tr>
<td>Master of Science in Criminalistics</td>
<td>California State University at Los Angeles (CA)</td>
<td>School of Criminal Justice and Criminalistics</td>
</tr>
<tr>
<td>Master of Science in Forensic Science</td>
<td>Cedar Crest College (PA)</td>
<td>Department of Chemistry and Physical Sciences</td>
</tr>
<tr>
<td>Master of Science in Forensic Science</td>
<td>Duquesne University (PA)</td>
<td>Forensic Science and Law Masters Program</td>
</tr>
<tr>
<td>Master of Science in Forensic Science</td>
<td>Florida International University (FL)</td>
<td>Department of Chemistry and Biochemistry</td>
</tr>
<tr>
<td>Master of Science in Forensic Science</td>
<td>George Washington University (DC)</td>
<td>Columbus College of Arts and Science</td>
</tr>
<tr>
<td>Master of Science in Forensic Science</td>
<td>University of Illinois at Chicago (IL)</td>
<td>Department of Biopharmaceutical Sciences</td>
</tr>
<tr>
<td>Master of Science in Forensic Science</td>
<td>Marshall University (WV)</td>
<td>Forensic Science Center</td>
</tr>
<tr>
<td>Master of Science Degree (Biology and Chemistry Tracks)</td>
<td>Michigan State University (MI)</td>
<td>Forensic Science Program</td>
</tr>
</tbody>
</table>

Available at www.aafs.org.
There are very few academic institutions that offer a PhD in forensic science, and none is within the United States. In the US, most forensic scientists with a terminal degree obtained their PhD in chemistry or biology, with a specialization or area of research related to forensic science. In order to perform forensic research at an academic institution, a PhD is essential and a doctoral degree can also make a forensic scientist a more credible witness in court. Opportunities for advancement and leadership positions are more likely for PhD-level scientists. Additionally, some forensic science service providers are now specifically requesting PhD-level applicants to address laboratory accreditation needs, and the growing complexity of scientific and legal issues addressed by practicing forensic scientists.

Although there are no PhD programs in Forensic Science currently, some FEPAC-accredited MS programs offer PhDs in the basic sciences. This long-standing, traditional approach is likely to change as there is greater demand for recognized and credentialed experts in forensic science with PhDs. Although existing doctoral programs in molecular biology, chemistry and related natural sciences provide adequate preparation scientifically, they do not address the interdisciplinary nature of forensics, encompassing science, law and criminal justice. As a result, existing programs do not adequately meet workforce needs. The proposed Forensic Science PhD at SHSU is an interdisciplinary scientific program, rooted in the natural sciences. However, in addition to the traditional focus on core scientific principles and understanding, it will address additional knowledge, skills and abilities to develop effective forensic leaders for the future. Leadership challenges in forensic science are similar to other technology-intensive organizations. To survive, leaders in forensic laboratories must continuously monitor productivity, efficiency, quality, turnover, intellectual capital and client needs. The PhD in Forensic Science at SHSU will better prepare candidates who hope to pursue leadership roles within forensic organizations in the future.

The NAS Report also specifically commented on the absence of doctoral programs in forensic science, which is considered by some to be a shortcoming in forensic science education as a
whole. Given the lack of forensic science PhD programs in the US currently, there is no way to estimate the number of PhD graduates annually who seek employment in forensic science. However, according to the Bureau of Justice Statistics, 13% of full time employees in publicly funded laboratories are managers (directors and supervisors)\textsuperscript{12}. The lack of existing programs means there is no duplication. In contrast, it would set SHSU apart from other institutions by establishing a path forward for forensic science education at the doctoral level. The proposed program will be a pioneering effort that will place Texas at the forefront of forensic science education and research.

C. Student Demand

Enrollment in Forensic Science Programs

Growth in forensic science education exists in two forms: admission of more students to existing programs and the development of new programs, both of which have been burgeoning over the past decade. As discussed previously, the proliferation of forensic programs nationally over a relatively short period caused serious concerns regarding quality and sustainability. The increase in FEPAC-accredited programs provides a better measure of quality, or high caliber growth. A review of the nine FEPAC-accredited programs (MS and BS) in 2009 showed that the average BS enrollment increased over a seven year period from fifty-seven to eighty-five and the average MS enrollment remained constant at approximately eighteen students\textsuperscript{13}. The total number of students enrolled in and graduating from FEPAC-accredited forensic science programs tripled over the same time period, primarily due to the introduction of new programs. The considerable growth in the number of students seeking forensic-related degrees at FEPAC-accredited universities was largely attributed to new program growth, rather than growth in enrollment at existing programs.

Enrollment and Post-Graduate Success at SHSU

Student enrollment in the Forensic Science MS program at SHSU increased more than 100% since 2006. In 2012, fifteen students graduated from the MS program, compared with 7 in 2006 (Table 2). Enrollment has grown steadily, with no attrition. This is not uncommon for FEPAC-accredited forensic science MS programs. Despite the fact that forensic science continues to attract some students who are not prepared for rigorous scientific study, FEPAC-accredited programs at the undergraduate and graduate level are less susceptible to attrition compared with non-accredited programs due to the high standards of admission required as part of the accreditation requirements.

Graduation rates since 2006 have been 100% at the MS level and most recently during the fall 2012 semester, the MSFS Program accepted its largest class of seventeen new students. Moreover, the appeal is not regional. In 2012, almost one third of students admitted to the program were out-of-state students, and as many as 45% during previous years (2006-2012). This demonstrates not only the widespread appeal of the program at the national level, but also its reputation among students for high quality forensic education.


\textsuperscript{13} The Status of Forensic Science Degree Programs in the United States. GP Jackson. Forensic Science Policy and Management, 1: 2-9, 2009.
Table 2. Graduation rates by year (2006-2012).

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>7</td>
</tr>
<tr>
<td>2007</td>
<td>10</td>
</tr>
<tr>
<td>2008</td>
<td>13</td>
</tr>
<tr>
<td>2009</td>
<td>13</td>
</tr>
<tr>
<td>2010</td>
<td>11</td>
</tr>
<tr>
<td>2011</td>
<td>12</td>
</tr>
<tr>
<td>2012</td>
<td>15</td>
</tr>
</tbody>
</table>

Post-graduate employment success within the MS Program is outstanding. Employment success is quantitatively assessed within one year of graduation (Table 3). This allows new graduates the time to apply and complete the necessary background checks and other requirements that can delay employment into safety sensitive positions. Since 2006, the program reported postgraduate success rates in excess of 90% each year. For years in which employment success was less than 100%, this represented no more than one student per graduating class unable to find work in forensics, and was often due to a non-academic issue such as failure to pass a background check.

Forensic science is rooted in the natural sciences of physics, chemistry, biology and medicine. Therefore, any forensic science program must be firmly based on these fundamental disciplines. The education must meet recruitment expectations of industry and produce graduates equipped to enter training programs of operational laboratories. A well-structured program is grounded solidly in the natural sciences, while at the same time providing necessary forensic science perspective to students to increase their value to prospective employers.
In addition to post-graduation employment data gathered by the program, an employer satisfaction survey is conducted annually to determine whether graduates of the MS Program meet employer expectations. The MSFS Program has conducted these surveys annually since 2006. In response to the survey, 100% of employers identified our graduates as being prepared and were willing to hire additional MSFS graduates in the future. The assessment data is supported by the fact that each year the Program Director receives requests from employers specifically looking to hire SHSU graduates to fill positions in accredited laboratories across the United States.

Table 3. Employment success and satisfaction rates by year (2006-2011).

<table>
<thead>
<tr>
<th>Graduation Year</th>
<th>Employment Success within 1 year (%)</th>
<th>Employer Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2007</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>2008</td>
<td>92</td>
<td>100</td>
</tr>
<tr>
<td>2009</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2010</td>
<td>91</td>
<td>100</td>
</tr>
<tr>
<td>2011</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

MSFS Employment Success
Forensic science programs, because of their underpinnings in natural science, are relevant to a wide range of chemistry, biology and medical applications. Nevertheless, post-graduation employment statistics reflect the diversity of the MSFS program as it is today. The majority of forensic science employment opportunities are rooted in molecular biology and chemistry. Employment statistics related to forensic discipline show that our graduates meet the needs of forensic science service providers, with the vast majority finding employment within the major disciplines of DNA (40%) and toxicology (35%). According to the Bureau of Justice Statistics, DNA and toxicology are among the most outsourced forensic disciplines14. Publicly funded crime laboratories faced a backlog of more than 1 million cases at years-end, so there is no question that SHSU forensic science graduates are effectively meeting job market needs.

The majority of existing MSFS graduates find work as government forensic scientists, finding employment in publicly funded laboratories at the state (27%), county (27%), city (6%) and federal (6%) level. To date, 7% pursue research, continuing their academic study at other institutions across the US. These students typically pursue doctoral degrees in chemistry, molecular biology or a related natural science. Current and past graduates of the MSFS Program are keen to pursue doctoral research within the institution in the future. Three of the 14 students graduating in 2012 indicated a preference to remain at SHSU and complete a PhD in Forensic Science. Instead, they pursued doctoral degrees in natural science out of state. Based on the reputation of the MS Program, its ability to attract out-of-state students, and the desire of students to continue their research once they are enrolled in the MS Program, the PhD in Forensic Science is likely to be extremely successful.

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D. Student Recruitment

Recruitment efforts would focus on attracting highly motivated applicants with strong and proven academic success in the natural sciences. Recruitment would take place on a state and national level, with emphasis on potential candidates already enrolled in the existing MS program, other FEPAC-accredited programs, and individuals already employed as forensic scientists who wish to pursue doctoral studies. The strong academic-industrial partnerships that already exist are also a vehicle for recruitment, particularly for those with laboratory experience and the desire to pursue doctoral research for advancement purposes. Students from underrepresented groups will be a targeted focus of recruitment and retention efforts, and scholarship funds will be made available to help attract and keep highly qualified students.

The MSFS program attracts a large number of out of state students due to recruitment efforts at the national level. This includes participation in the American Academy of Forensic Sciences (AAFS) Education Fair, an exposition of FEPAC-accredited forensic science programs, which takes place in conjunction with the annual AAFS meeting, attracting more than 3,000 attendees.

E. Enrollment Projections

Use this table to show the estimated cumulative headcount and full-time student equivalent (FTSE) enrollment for the first five years of the program. Include summer enrollments, if relevant, in the same year as fall enrollments. Provide explanations of how headcounts, FTSE numbers, and projections for under-represented students were determined.
Table 4. Enrollment projections.

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
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<tbody>
<tr>
<td>New Students</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>African-American</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Cumulative Headcount</td>
<td>6</td>
<td>12</td>
<td>17</td>
<td>24</td>
<td>31</td>
</tr>
<tr>
<td>FTSE$^{15}$</td>
<td>6.3</td>
<td>12.7</td>
<td>17.9</td>
<td>25.3</td>
<td>32.7</td>
</tr>
<tr>
<td>Attrition</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Graduates</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

The existing MSFS limits enrollment to no more than 20 students in each academic year cohort. The proposed Ph.D. program will admit an annual cohort of 6 doctoral students during the first three years of operation and offset estimated attrition of 1 student in years 3 and 5 by admitting 7 students in years 4 and 5. The size of the cohort is based upon past experience with applicant pools in forensic science as well as available resources for the proposed program. There should be no difficulty in recruiting and enrolling 6 highly qualified doctoral students annually. The numbers of new students listed in the enrollment projections in Table 4 are inclusive of African-American and Hispanic students. These projections for the PhD program are based upon the existing racial mix within the existing MS program.

II. Academics

Opportunities for Research

The research philosophy of the doctoral program in forensic science is two-fold: First, to promote interdisciplinary scientific research and second, promotion of academic-industrial partnerships with forensic laboratories.

Forensic research at SHSU is already interdisciplinary in nature and attracts significant federal funding. Since 2008, SHSU has attracted more than $4.5 million in external funding (Table 5), of which core and support faculty associated with the doctoral program account for more than $3 million. The proposed PhD program would make SHSU more competitive in terms of federal awards and assistance. In addition to state, local and federal funds in support of forensic science and related research, students at SHSU would be eligible for the Ph.D. Graduate Research Fellowship (GRF) program of the National Institute of Justice (NIJ). These competitive awards support research on crime, violence, and other criminal justice-related topics within accredited academic universities that offer research-based doctoral degrees in disciplines relevant to NIJ’s mission.

The report to Congress from the National Academy of Science specifically addressed the need for additional research and the importance of FEPAC-accredited educational programs.

$^{15}$ FTSE calculated based upon the completion of 19 SCH (year one) / 18 SCH (requirement for doctoral programs) x number of students (cumulative headcount).
Proposed forensic science reform legislation specifically addresses these issues. Reform legislation calls for the development of a national research strategy. It calls for grant funding to specifically address the need to conduct research, build relationships with forensic practitioners, and educate students. It calls for academia and practitioners alike to stimulate innovative and creative solutions to satisfy the research needs and priorities identified in the research strategy.

Table 5. Summary of external funding demonstrating interdisciplinary forensic research at SHSU.

<table>
<thead>
<tr>
<th>Funding Agency and Title</th>
<th>Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bureau of Justice Assistance. <strong>SHSU Rural Crime Laboratory</strong>. Dr. Vincent Webb, Principal Investigator (Criminal Justice), 2011-2012.</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Bureau of Justice Assistance. <strong>SHSU Rural Crime Laboratory</strong>. Dr. Vincent Webb, Principal Investigator (Criminal Justice), 2010-2011.</td>
<td>$800,000</td>
</tr>
<tr>
<td>Department of Justice, Office of Justice Programs, National Institute of Justice. <strong>SHSU Rural Crime Laboratory</strong>, Dr. Vincent Webb, Principal Investigator (Criminal Justice), 2010-2011.</td>
<td>$701,475 $335,360</td>
</tr>
<tr>
<td>United States Environmental Protection Agency (EPA). <strong>Environmental Crimes Program Training (Project ENCRYPT)</strong>. Dr. David Webb, Principal Investigator (Criminal Justice), 2012.</td>
<td>$893,483</td>
</tr>
<tr>
<td>Department of Justice, Office of Justice Programs, National Institute of Justice. <strong>Designer Amphetamines in Forensic Toxicology Casework: Analysis and Prevalence</strong>. Dr. Sarah Kerrigan, Principal Investigator (Forensic Science/Criminal Justice), 2008-2011.</td>
<td>$466,492</td>
</tr>
<tr>
<td>National Institute of Health. <strong>Catalytic Bio-Scavengers with Broad Specificity Against OP Nerve Agents</strong>. Dr. Ilona Petrikovics, Principal Investigator (Chemistry), 2007-2011.</td>
<td>$400,861</td>
</tr>
<tr>
<td>Department of Justice, Office of Justice Programs, National Institute of Justice. <strong>Opening the Black Box of NIBIN</strong>. Dr. William King, Principal Investigator (Criminal Justice), 2011 (3 yrs).</td>
<td>$341,807</td>
</tr>
<tr>
<td>Department of Justice, Office of Justice Programs, National Institute of Justice. <strong>Development of Quantitative Evaluation of Steganalysis and Digital Forgery Detection Systems</strong>. Qingzhong Liu, Principal Investigator (Computer Science), 2012 (3 yrs).</td>
<td>$331,056</td>
</tr>
<tr>
<td>Department of Justice, Office of Justice Programs, National Institute of Justice. <strong>Human Decomposition: A Mosaic Model for Community Succession and Implications for Future Forensic Research</strong>. Sybil Bucheli/Aaron Lynne, Principal Investigators (Biological Science), 2012 (3 yrs).</td>
<td>$304,961</td>
</tr>
<tr>
<td>United States Army Medical Research Institute of Chemical Defense (USAMRICD). <strong>Development and Efficacy Testing of Next Generation Cyanide Antidotes</strong>. Dr. Ilona Petrikovics, Principal Investigator (Chemistry), 2012.</td>
<td>$192,880</td>
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<tr>
<td>National Institute of Health: National Institute of Allergy and Infectious Disease/United States Army Medical Research Institute of Chemical</td>
<td>$191,712 $208,305</td>
</tr>
<tr>
<td>Project Description</td>
<td>Principal Investigator(s)</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Department of Justice, Office of Justice Programs, National Institute of Justice. <strong>Improved Detection of Synthetic Cathinones (“Bath Salts”) in Forensic Toxicology Samples</strong>.</td>
<td>Dr. Sarah Kerrigan, Principal Investigator (Forensic Science/Criminal Justice), 2012.</td>
</tr>
<tr>
<td>Department of Justice, Office of Justice Programs, National Institute of Justice. <strong>Sex Assault Kit Backlog/HPD</strong>.</td>
<td>Dr. William Wells, Principal Investigator (Criminal Justice), 2011, Phase III (pending).</td>
</tr>
<tr>
<td>Texas Education Agency. <strong>Development/revision of CTE Forensic Science project</strong>.</td>
<td>Dr. David Webb, David Gangitano, Principal Investigators (Criminal Justice), 2011, 2012. (pending).</td>
</tr>
<tr>
<td>Court of Criminal Appeals of Texas. <strong>Eyewitness Identification Policy</strong>.</td>
<td>Dr. Rita Watkins, Principal Investigator (Criminal Justice), 2012.</td>
</tr>
<tr>
<td>National Institute of Justice (NIJ)/Forensic Science Foundation (FSF) Student Grant. <strong>Species Composition of the Maggot Mass</strong>.</td>
<td>David Gangitano/Sybil Bucheli, Principal Investigators (Forensic Science/Criminal Justice; Biological Science) for Ashleigh Faris. 2011-2012.</td>
</tr>
<tr>
<td>National Institute of Justice (NIJ)/Forensic Science Foundation (FSF) Student Grant. <strong>Salvinorin A in Blood: Detection, Stability and Selection of Internal Standard</strong>.</td>
<td>Sarah Kerrigan, Principal Investigator (Forensic Science/Criminal Justice) for Lyndsi Ayers. 2009-2010.</td>
</tr>
<tr>
<td>National Institute of Justice (NIJ)/Forensic Science Foundation (FSF) Student Grant. <strong>Detection of Beta-Keto Amphetamines in Biological Samples</strong>.</td>
<td>Sarah Kerrigan, Principal Investigator (Forensic Science/Criminal Justice) for Kayla Ellefsen. 2011-2012.</td>
</tr>
<tr>
<td>National Institute of Justice (NIJ)/Forensic Science Foundation (FSF) Student Grant. <strong>The Detection of Synthetic Cannabinoids in Biological Samples</strong>.</td>
<td>Sarah Kerrigan, Principal Investigator (Forensic Science/Criminal Justice) for Emily Young. 2010-2011.</td>
</tr>
<tr>
<td>National Institute of Justice (NIJ)/Forensic Science Foundation (FSF), Student Grant. <strong>Marijuana Profiling Using Headspace Solid Phase Microextraction Coupled with Gas Chromatography/Mass Spectrometry</strong>.</td>
<td>Dr. Jorn Yu, Principal Investigator (Forensic Science/Criminal Justice) for Tiffany McCann, 2012-2013.</td>
</tr>
<tr>
<td>National Institute of Justice (NIJ)/Forensic Science Foundation (FSF), Student Grant. <strong>The Separation Of Chiral Psychodelic Amphetamine By Molecularly Imprinted Monolithic Polymers</strong>.</td>
<td>Dr. Jorn Yu, Principal Investigator (Forensic Science/Criminal Justice) for Seongshin Gwak, 2010-2011.</td>
</tr>
<tr>
<td>National Institute of Justice (NIJ)/Forensic Science Foundation (FSF) Student Grant. <strong>Pollen DNA: A New Tool for Forensic Investigations</strong>.</td>
<td>David Gangitano, Principal Investigator (Forensic Science/Criminal Justice) for Jennifer Sycalik. 2009-2010.</td>
</tr>
</tbody>
</table>
Academic-Industrial Partnerships

Most operational laboratories are overwhelmed by casework and carry significant backlogs, making it difficult for examiners to accommodate research within the operational pressures of their organizations. Laboratories are also able to provide ideas for research projects based upon problems encountered in casework and technological needs, based on their own experience of where scientific improvements are needed and where knowledge gaps exist.

Universities can provide a strong research capability, and partnerships between forensic laboratories and academia are mutually beneficial. The doctoral program in forensic science promotes this exchange, whereby the laboratory becomes engaged in meaningful research and access to additional resources, and the university is able to establish a meaningful partnership with industry. This allows the university to demonstrate industrial relevance, and the forensic laboratory to demonstrate wider scientific awareness. Academic partnerships can play a significant role in ensuring an outward looking scientific attitude is maintained, as highlighted in the NAS report.

The conflict that arises between popularly promoted science and reality makes it all the more important for programs to have strong links with operational laboratories and make the most of bilateral partnerships between academia and industry. Universities can play an important role in the quality management continuum of an operational laboratory by providing scientific education and valuable research. Access to resources necessary for rigorous scientific research is a major advantage of these partnerships. Linking operational laboratories with productive research programs provides a basis for a proactive and forward-looking profession. The strong academic-industrial partnerships that already exist at SHSU\textsuperscript{16} will ensure that research in the PhD program will have a direct benefit to the field of forensic science.

A. Accreditation

The American Academy of Forensic Sciences (AAFS) was established in 1948 to promote education and research in the forensic sciences; to encourage the study, improve the practice, elevate the standards, and advance the cause of the forensic sciences; to promote interdisciplinary communications; and to plan, organize, and administer meetings, reports, and other projects for the stimulation and advancement of these and related purposes\textsuperscript{17}.

An assessment of forensic sciences published in 1999 by the National Institute of Justice (NIJ), entitled “Forensic Science: Review of Status and Needs,” described the educational and training needs of the forensic science community as “immense.” The report specifically called for the following:

\textsuperscript{16} See Recommended Appendix B - Specific Clinical or In-Service Sites to Support the Program: Current Internship Agencies Illustrating Existing Academic-Industrial Partnerships.
\textsuperscript{17} www.AAFS.org.
• National standards for education in forensic sciences.
• An independent, community-wide, consensus-building, standard-setting body such as a technical working group for education in forensic sciences.
• An accreditation system for forensic science education programs.

These recommendations from the National Institute of Justice were met in 2003 with the establishment of the standards developed by the Forensic Science Education Programs Accreditation Commission. FEPAC accredits BS and MS-level forensic science programs. There is no accrediting body for doctoral programs at present. However, that is likely to change in coming years given the recent focus on forensic science education and research needs throughout the US. When developing accreditation standards for new degree programs, the commission typically works with one or two pilot programs. Given SHSU’s strong performance in the MS program under FEPAC, we would aggressively pursue the opportunity to be the pilot PhD program in forensic science.

B. Admissions Standards

Candidates for admission must hold a bachelor's degree or higher from a regionally accredited institution in chemistry or biology; or a bachelor's degree or higher from a regionally accredited institution in a forensic or natural science with the equivalent of a minor in either chemistry or biology.

The PhD in Forensic Science requires the completion of 86 semester credit hours of core course work, internship, electives and dissertation, based upon the student’s original research. Students who previously graduated from the MSFS program at SHSU may incorporate up to 44 semester credit hours towards the doctoral degree with approval from the Forensic Science Advisory Committee. A maximum of 15 semester credit hours may be transferred from another graduate program with approval from the Forensic Science Advisory Committee in accordance with institutional policies.

C. Degree Requirements

Currently there are no PhD programs in Forensic Science within the United States. Instead, individuals pursue doctoral degrees in the natural sciences. Doctoral programs that offer “emphasis” in forensic science are summarized in Table 6. Degree requirements vary considerably, with credit hours ranging from 46-90 between institutions. The programs in Table 6 include those selected by past MSFS graduates for doctoral pursuits. Although several offer forensic “emphasis”, course offerings in highly specialized disciplines of forensic science are very limited. The Forensic Science Department at SHSU already offers a robust and diverse graduate curriculum as a result of the FEPAC-accredited Master’s program. The institution has the resources necessary to develop and support the additional courses that are needed. The foundation of the interdisciplinary doctoral program in forensic science at SHSU is rooted in the existing MS program, with strong focus on interdisciplinary and interdepartmental collaboration, course development, research, and existing industrial partnerships. The proposed doctoral program, which is designed to advance its graduates into leadership positions within forensic science, is unique in this respect.
A precedent has already been set for a truly interdisciplinary science program at the doctoral level in Texas. The Interdisciplinary Program in Chemical Biology at the University of Houston is an interdepartmental research program requiring 54 semester credit hours beyond the bachelor’s level. This program was developed to establish a pathway towards doctoral level education that crossed traditional disciplines of chemistry, biology and biochemistry. Although this interdisciplinary program does not have any forensic science focus or emphasis, it is an example of how collaborative research within a doctoral program can advance modern science and technology in more than one department.

Table 6. Doctoral programs within the US offering “emphasis” in forensic science.

<table>
<thead>
<tr>
<th>Institution/ Department</th>
<th>Degree</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Albany Department of Chemistry</td>
<td>PhD in Analytical/Forensic Chemistry</td>
<td>60 credits; (limited core coursework, heavily focused on medicinal chemistry and forensic drug chemistry)</td>
</tr>
<tr>
<td>Florida International University Department of Chemistry</td>
<td>PhD in Chemistry</td>
<td>90 credits; emphasis on analytical (trace/toxicological) or biochemical (emphasis on DNA)</td>
</tr>
<tr>
<td>Ohio University Department of Chemistry and Biochemistry</td>
<td>PhD in Chemistry</td>
<td>No fixed number of credits; Interdisciplinary programs specializing in bio-analysis, bio-organic chemistry and biochemistry; forensic chemistry focus</td>
</tr>
<tr>
<td>University of Central Florida Department of Chemistry</td>
<td>PhD in Chemistry</td>
<td>72 credits beyond the bachelor’s degree with 15 credit hours of dissertation; forensic chemistry focus</td>
</tr>
<tr>
<td>University of North Texas Health Science Center Graduate School of Biomedical Sciences</td>
<td>PhD in Biomedical Science (with forensic/investigative genetics focus)</td>
<td>90 credits beyond the bachelor’s degree with a minimum of 12 credit hours of dissertation; emphasis on forensic investigative genetics</td>
</tr>
<tr>
<td>University of Maryland School of Public Health</td>
<td>PhD in Toxicology and Environmental Health</td>
<td>46 credits; minimum of 12 credit hours of dissertation</td>
</tr>
</tbody>
</table>

The PhD in Forensic Science will require the completion of 86 credit hours beyond the bachelor's degree (Table 7). Students complete a total of 45 credit hours of core coursework (inclusive of internship), a minimum of 15 credit hours of dissertation research and an additional 26 credit hours of electives. The curriculum is designed to deliver an essential core curriculum in forensic science, together with specialized electives and research in the area of interest. Students are expected to fulfill the requirements during four to five years of full-time study.
Table 7. Degree Requirements

<table>
<thead>
<tr>
<th>Category</th>
<th>Semester Credit Hours</th>
<th>Clock Hours (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Prescribed Electives</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Free Electives</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Dissertation</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Other (Specify, e.g., internships, clinical work, residencies)</td>
<td>6 Internship (Required)</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>86</td>
<td></td>
</tr>
</tbody>
</table>

In the curriculum schematic that follows, semester credit hours for each course offering are shown in parenthesis. The cumulative credit count is also indicated on the right hand side for anticipated completion over a four year period.
Curriculum Schematic

**Year 1**
- Core course work [19]
- Forensic Science Internship [6]

**Fall [9 Credit Hours]**
- FORS 5445 Forensic Instrumental Analysis [4]
- FORS 5117 Controlled Substances [1]
- FORS 5446 Forensic Toxicology [4]

**Spring [11 Credit Hours]**
- FORS 5360 Pattern and Physical Evidence Concepts [3]
- FORS 5440 Forensic Biology [4]
- FORS 5335 Trace Evidence and Microscopic Analysis [3]

**Summer I and II**
- FORS 6371 Forensic Science Internship [6]

Total: 19 credits

**Year 2**
- Core course work [11]
- Specialized Electives [8]
- Portfolios Review
- Research Proposal
- Oral Defense

**Fall [9 Credit Hours]**
- FORS 5226 Law and Forensic Science [2]
- FORS 6394 Forensic Science Capstone Course [3]
- Elective(s) [4]

**Spring [9 Credit Hours]**
- FORS 6224 Quality Assurance & Ethics in Forensics [2]
- FORS 5116 Seminar in Forensic Science [1]
- FORS 6394 Forensic Science Capstone Course [3]
- Elective(s) [4]

Total: 44 credits

**Year 2 (Spring)**
- Advancement to candidacy

**Year 3**
- Core course work [6]
- Specialized Electives [9]
- Dissertation [9]

**Fall [9 Credit Hours]**
- FORS 7331 Research Methods [3]
- FORS 7332 Scientific Communications [3]
- Elective(s) [3]

**Spring [9 Credit Hours]**
- FORS 8099 Dissertation [3]
- Elective(s) [6]

**Summer [6 Credit Hours]**
- FORS 8099 Dissertation [6]

Total: 68 credits

**Year 4**
- Core course work [3]
- Specialized Electives [9]
- Dissertation [6]

**Fall [9 Credit Hours]**
- FORS 7390 Forensic Laboratory Management [3]
- FORS 8099 Dissertation [3]
- Elective(s) [3]

**Spring [9 Credit Hours]**
- FORS 8099 Dissertation [3]
- Elective(s) [6]

Total: 86 credits

- Formal public seminar
- Dissertation defense

Unsuccessful candidates may be allowed to complete the requirements for the MS degree.
D. Curriculum

Educational objectives

1. Provide students the knowledge, skills and abilities to prepare them for successful careers in forensic science.

2. Develop students’ critical thinking ability, problem-solving skills and advanced discipline-specific knowledge.

3. Produce high quality graduates capable of advancement into leadership positions.

4. Engage in collaborative research that demonstrates industrial relevance and wider scientific awareness.

2. Use these tables to identify the required courses and prescribed electives of the program. Note with an asterisk (*) courses that would be added if the program is approved. (Add and delete rows as needed. If applicable, replicate the tables for different tracks/options.)

Table 8. Required courses.

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Required Courses</th>
<th>SCH</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORS 5445</td>
<td>Forensic Instrumental Analysis</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>FORS 5360</td>
<td>Pattern and Physical Evidence Concepts</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>FORS 5231</td>
<td>Techniques for Crime Scene Investigation</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>FORS 5117</td>
<td>Controlled Substances</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>FORS 5440</td>
<td>Forensic Biology</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>FORS 5335</td>
<td>Trace Evidence and Microscopic Analysis</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>FORS 5446</td>
<td>Forensic Toxicology</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>FORS 6371</td>
<td>Forensic Science Internship (6 credit hours total)</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Summer)</td>
</tr>
<tr>
<td>FORS 5116</td>
<td>Seminar in Forensic Science</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>FORS 6394 / 6114</td>
<td>Forensic Science Capstone Course (6 credit hours total) – Special Topics in Forensic Science</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>FORS 5226</td>
<td>Law and Forensic Science</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Prefix and Number</td>
<td>Prescribed Elective Courses</td>
<td>SCH</td>
<td>Year</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------------</td>
<td>-----</td>
<td>------</td>
</tr>
<tr>
<td>FORS 6224</td>
<td>Quality Assurance and Ethics in Forensic Science</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>FORS 7331</td>
<td>Research Methods*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>FORS 7332</td>
<td>Scientific Communications*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>FORS 7390</td>
<td>Forensic Laboratory Management*</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>FORS 8099</td>
<td>Dissertation (15 credit hours total)*</td>
<td>15</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Table 9. Electives

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Prescribed Elective Courses</th>
<th>SCH</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORS 5361</td>
<td>Advanced Forensic Biology</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>FORS 5215</td>
<td>Statistical Genetics</td>
<td>2</td>
<td>2-4</td>
</tr>
<tr>
<td>FORS 6333</td>
<td>Behavioral Genetics</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>BIOL 5391</td>
<td>Advanced Genetics</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>FORS 5333</td>
<td>Forensic Anthropology</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>BIOL 5305</td>
<td>Forensic Entomology</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>FORS 6346</td>
<td>Advanced Forensic Toxicology</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>PSYC 5361</td>
<td>Neuropsychopharmacology</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>CHEM 5372</td>
<td>Advanced Biochemistry I</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>FORS 6335</td>
<td>Advanced Forensic Chemistry</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>BIOL 5340</td>
<td>Electron Microscopy</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>CHEM 5368</td>
<td>Analytical Spectroscopy</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>FORS 5114</td>
<td>Firearms and Toolmarks</td>
<td>1</td>
<td>2-4</td>
</tr>
<tr>
<td>FORS 7381</td>
<td>Explosive Analysis and Detection*</td>
<td>3</td>
<td>2-4</td>
</tr>
<tr>
<td>FORS 7381</td>
<td>Warfare Agents*</td>
<td>3</td>
<td>2-4</td>
</tr>
</tbody>
</table>

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18 Additional electives may be selected with approval of the Forensic Science Department Chair.
Table 10. Free electives.

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Free Elective Courses</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**E. Candidacy/ Dissertation**

A doctoral student may proceed to candidacy upon successful completion of 44 graduate semester credit hours as follows:

- Nineteen credit hours of core and elective coursework in forensic science during the first year of study; and
- A full-time (400 hour) internship in forensic science during summer I and summer II semesters totaling six credit hours; and
- Five credit hours of core coursework in forensic science, law and ethics during the second year of study; and
- Eight credit hours of electives in specialized courses in the departments of forensic science, chemistry, biological sciences (or other departments upon approval); and
- Completion of six credit hours of capstone research during the second year of study to demonstrate competency with respect to research.

At this time a doctoral student who does not wish to advance to candidacy may petition the Forensic Science Advisory Committee to complete the requirements for a Master of Science in Forensic Science degree.

**Advancement to Candidacy**

In order to advance to doctoral candidacy students must:

1. Submit a portfolio for review
2. Write a formal research proposal
3. Orally defend the proposal

Students must prepare a portfolio which is a self-evaluation of their progress. This may include papers written for coursework or research, technical reports, a presentation on a
research topic, and/or reviews from previous faculty or instructors. Students are not required to take a comprehensive exam, but must demonstrate their potential in terms of research, technical writing and scholarly enquiry.

The student must also prepare a formal written proposal describing the research. The research proposal must be an outline of the dissertation project. It must include a summary of the project, the hypothesis to be investigated, significance, research design and methodology, limitations and a review of the relevant literature.

Finally, the research proposal must be submitted and orally defended before the end of the second spring semester. The forensic science capstone course is a year-long independent research project conducted under the direct supervision of SHSU faculty. Successful completion of this course, together with the research seminar (FORS 5116), will adequately prepare students for advancement to candidacy during the second year.

A committee comprised of at least four faculty members will perform the review. At least two members of the committee shall be graduate faculty in forensic science or the Departments of Chemistry or Biological Science; one shall be from the College of Criminal Justice; at least one reviewer on each committee must be external to both Criminal Justice and Forensic Science.

If the portfolio, proposal and defense are satisfactory, the student may advance to doctoral candidacy. Doctoral students who are not successful may be dismissed or allowed to complete the requirements for a Master of Science degree.

Students must advance to candidacy before registering for dissertation credits.

During years three and four, doctoral students must maintain continuous enrollment until the dissertation has been completed and submitted for review in accordance with institutional policy. Interdisciplinary and collaborative research is highly encouraged. Although the dissertation research is performed under the direction of the faculty advisor, it is permissible for some research to be conducted off campus or at an affiliated laboratory or facility upon department approval.

During year three students must complete an additional 6 graduate credit hours of core coursework focusing on research methods and design, grant writing and scientific communications. The Forensic Laboratory Management and Leadership requirement is typically completed during the fourth or final year of study. Directed research in the form of a practicum is also highly encouraged during the final year of study. This experience is designed to bridge the gap between academic research and industry and makes use of the strong academic-industrial partnerships that exist. It affords the doctoral student the opportunity to apply the research in a practical setting, adapt technologies for maximal use, appreciate the steps necessary for the implementation of new technology within an accredited environment, and observe the technical and non-technical processes involved.

During years three and four, students are required to take an additional 18 credits of approved electives in the departments of forensic science (FORS), chemistry (CHEM) and biology (BIOL). Specialized coursework in other departments is permissible (MGMT, COMS,
PSYC) and encouraged, particularly for students who intend to pursue administrative leadership roles.

F. Use of Distance Technologies

None at present.

G. Program Evaluation

The program will be evaluated in accordance with the Graduate Program Standards of the Forensic Science Education Programs Accreditation Committee (FEPAC)\(^\text{19}\). In accordance with those 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. The program must combine rigorous scientific and laboratory training with exposure to the breadth of forensic science disciplines, including forensic science practice, law enforcement, and ethics. Additionally, the doctoral program will quantitatively evaluate its performance using institutional measures of effectiveness in terms of publication rate, postgraduate employment success and employer satisfaction. In addition, the program will be reviewed as part of the ongoing SHSU periodic academic program review process. This process involves intensive self-study complemented by an external assessment conducted by disciplinary experts. The doctoral program will be subjected to this review every five years.

III. Faculty

A. Faculty Availability

Use these tables to provide information about core and support faculty. Add an asterisk (*) before the names of the individuals who will have direct administrative responsibilities for the program. Add a pound symbol (#) before the name of any individuals who have directed doctoral dissertations or master’s theses. Add and delete rows as needed. (Core Faculty: Full-time tenured and tenure-track faculty who teach 50 percent or more in the doctoral program or other individuals integral to the doctoral program who can direct dissertation research. Support Faculty: Other full-time or part-time faculty affiliated with the doctoral program.)

\(^{19}\) Available at www.aafs.org.
<table>
<thead>
<tr>
<th>Name and Rank of Core Faculty</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program</th>
<th>% Time Assigned to Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>* #Kerrigan, Sarah (Professor &amp; Chair)</td>
<td>PhD Chemistry University of British Columbia, Canada</td>
<td>FORS 5446 (Forensic Toxicology), FORS 5116 (Forensic Seminar), FORS 6371 (Forensic Internship), FORS 6394 (Forensic Science Capstone), FORS 6224 (QA and Ethics in Forensic Science), FORS 7390 (Forensic Lab Management), FORS 7332 (Scientific Communications), FORS 6346 (Advanced Forensic Toxicology), FORS 7389 (Practicum), FORS 8099 (Dissertation)</td>
<td>50%</td>
</tr>
<tr>
<td>#Gangitano, David (Assistant Professor)</td>
<td>PhD Forensic Medicine &amp; Toxicology, University of Buenos Aires, Argentina</td>
<td>FORS 5231 (CSI), FORS 5440 (Forensic DNA), 5116 (Forensic Seminar), FORS 6224 (QA and Ethics in Forensic Science), FORS 5361 (Advanced Forensic DNA), FORS 5215 (Statistical Genetics), FORS 6394 (Forensic Science Capstone), FORS 7331 (Research Methods), FORS 8099 (Dissertation)</td>
<td>50%</td>
</tr>
<tr>
<td>#Yu, Chi-Chung (Associate Professor)</td>
<td>PhD Chemistry, Carleton University, Canada</td>
<td>FORS 5445 (Forensic Instrumental), FORS 5360 (Pattern Evidence), FORS 5117 (Controlled Substances), FORS 5335 (Trace Evidence), 6224 (QA and Ethics in Forensic Science); FORS 6394 (Forensic Science Capstone), FORS 7331 (Research Methods), FORS 6335 (Advanced Forensic Chemistry), FORS 8099 (Dissertation)</td>
<td>50%</td>
</tr>
<tr>
<td>Hughes-Stamm, Sheree (Clinical Assistant)</td>
<td>PhD Biology, Bond University, Australia</td>
<td>FORS 5440 (Forensic DNA), FORS 5116 (Forensic Seminar), FORS 5361 (Advanced Forensic DNA), FORS 5215 (Statistical Genetics), FORS 7332 (Scientific Communications), FORS 8099</td>
<td>50%</td>
</tr>
</tbody>
</table>
During the first several years of program operation, core faculty who are full-time in forensic science will have 50% of their time allocated to the doctoral program. This allocation is based on the estimated mix of masters-level and doctoral students. About 50% of the instructional and research effort of the Forensic Science Department will be devoted to doctoral-level education and 50% to masters-level education. Support faculty include those from departments other than forensic science who will teach an occasional elective in which doctoral students as well as students from other programs and disciplines are enrolled. On occasion they will serve on dissertation committees and direct doctoral student research.

Table 12. Support faculty.

<table>
<thead>
<tr>
<th>Name of Support Faculty and Faculty Rank</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program or Other Support Activity</th>
<th>% Time Assigned to Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armstrong, Todd (Associate Professor)</td>
<td>PhD Criminology and Criminal Justice, University of Maryland</td>
<td>FORS 6333 (Behavioral Genetics)</td>
<td>15%</td>
</tr>
<tr>
<td>Boisvert, Danielle</td>
<td>PhD Criminal Justice, Penn</td>
<td>FORS 6333 (Behavioral Genetics)</td>
<td>15%</td>
</tr>
</tbody>
</table>

# Existing students in the Master of Science in Forensic Science complete the equivalent of a master’s thesis during the course of their two-year full-time study.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>University/Program</th>
<th>Course(s)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boutwell, Brian</td>
<td>Assistant Professor</td>
<td>PhD Criminology, Florida State University</td>
<td>FORS 6334 (Behavioral Genetics)</td>
<td>15%</td>
</tr>
<tr>
<td>Bucheli, Sibyl</td>
<td>Assistant Professor</td>
<td>PhD Entomology, Ohio State University</td>
<td>FORS 5305 (Forensic Entomology)</td>
<td>15%</td>
</tr>
<tr>
<td>Choudhary, Madhusudan</td>
<td>Assistant Professor</td>
<td>PhD Genetics, McMaster University, Canada</td>
<td>BIOL 5391 (Advanced Genetics)</td>
<td>&lt;5%</td>
</tr>
<tr>
<td>Dowling, Jerry</td>
<td>Professor</td>
<td>J.D., College of Law, The University of Tennessee</td>
<td>FORS 5226 (Law and Forensic Science)</td>
<td>15%</td>
</tr>
<tr>
<td>Haines, Donovan</td>
<td>Assistant Professor</td>
<td>PhD Chemistry, Wichita State University</td>
<td>CHEM 5372 (Advanced Biochemistry I)</td>
<td>15%</td>
</tr>
<tr>
<td>King, William</td>
<td>Associate Professor</td>
<td>PhD Criminal Justice, University of Cincinnati</td>
<td>FORS 7334 (Social Science of Forensics)</td>
<td>15%</td>
</tr>
<tr>
<td>Petrikovics, Ilona,</td>
<td>Associate Professor</td>
<td>PhD Medicinal Biology, University Medical School, Debrecen, Hungary; PhD Organic Chemistry, University of Arts and Sciences, Debrecen, Hungary</td>
<td>FORS 7389 (Warfare Agents)</td>
<td>15%</td>
</tr>
<tr>
<td>Randle, Chris</td>
<td>Assistant Professor</td>
<td>PhD Evolution, Ecology and Organismal Biology, Ohio State University</td>
<td>BIOL 5391 (Advanced Genetics)</td>
<td>&lt;5%</td>
</tr>
<tr>
<td>Williams, Darren</td>
<td>Associate Professor</td>
<td>PhD Chemistry, Oregon State University</td>
<td>FORS 7381 (Explosive Analysis and Detection), CHEM 5368 (Analytical)</td>
<td>15%</td>
</tr>
</tbody>
</table>
B. Teaching Load

The research teaching load for faculty at SHSU requires them to teach the equivalent of 9 credit hours each long semester. Doctoral courses are weighted in such a way as to result in a reduced course load in accordance with institutional policy. Faculty also earn release time for supervising dissertation research (upon the student’s completion of the research), and through external funding.

C. Faculty Productivity

For the most recent five years, indicate the number of discipline-related refereed papers/publications, books/book chapters, juried creative/performance accomplishments, notices of discoveries filed/patents issued per core faculty member, and the number and amount of external grants. Conference papers, reviews, posters, and similar scholarship need not be included. Where relevant to performing arts degrees, major performances or creative endeavors by core faculty should be included.

Table 13. Core faculty productivity.

<table>
<thead>
<tr>
<th>Core Faculty</th>
<th>Refereed Papers/Publications</th>
<th>Books/Book Chapters</th>
<th>Number of External Grants</th>
<th>Amount of External Grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Kerrigan, Sarah</td>
<td>9</td>
<td>5</td>
<td>5</td>
<td>$677,069</td>
</tr>
<tr>
<td>Gangitano, David</td>
<td>7</td>
<td>-</td>
<td>4</td>
<td>$310,700</td>
</tr>
<tr>
<td>Yu, Chi-Chung</td>
<td>10</td>
<td>1</td>
<td>2</td>
<td>$10,000</td>
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</table>
IV. Resources

A. Student Financial Assistance

Identify the number of full-time and part-time students who would be funded and the anticipated amounts for each of the first five years.

<table>
<thead>
<tr>
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<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<tr>
<td>Teaching Assistantships</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td># of students</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Amount per student</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Research Assistantships</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td># of students</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>Amount per student</td>
<td>$6,000</td>
<td>$6,000</td>
<td>$6,000</td>
<td>$6,000</td>
<td>$6,000</td>
</tr>
</tbody>
</table>

The College of Criminal Justice currently provides financial support in the amount of $20,000 per academic year to doctoral students serving as research assistants. Forensic science doctoral students would receive equivalent support. The most recent (2012) survey of criminal justice doctoral programs conducted by the Association of Doctoral Programs in Criminology and Criminal Justice (ADPCJ), indicates that the median stipend for criminology and criminal justice doctoral students is $20,000, although there is substantial variability across the 33 programs responding to the survey. The combination of stipend and scholarship support proposed for forensic science doctoral students will make the program competitive with regard to student support. The College of Criminal Justice also has a variety of different scholarships that would be made available to doctoral students and the College of Graduate Studies provides summer fellowship funding to support graduate student research that forensic science doctoral student would be able to access. Additional, external funding sources are available. The U.S. Department of Justice (DOJ), provides funding under the PhD Graduate Research Fellowship (GRF) program of the National Institute of Justice (NIJ). These competitive awards support research on research on crime, violence, and other criminal justice-related topics within accredited academic universities that offer research-based doctoral degrees in disciplines relevant to NIJ’s mission. Up to $25,000 is available for a 9-18-month project period for students who have advanced to
candidacy within the institution.

B. Library Resources

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 doctorate 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.

A full service interlibrary loan system allows students access to library resources from across the country. A “Virtual Reference Desk” provides students with real time access a librarian who can guide students to the appropriate resource, or help develop a research strategy. Current holdings in the library are fully adequate for this program. The library will monitor the demand for document delivery and interlibrary loan services to determine the need for additional journals or other electronic resources as the program grows and specific research areas are identified.

C. Facilities and Equipment

The existing Department of Forensic Science is located in the Chemistry and Forensic Science (CFS) Building, located centrally on campus. This $16M state of the art scientific facility was constructed in 2006 and houses both the Departments of Forensic Science (College of Criminal Justice) and Chemistry (College of Science). The 37,000 square foot facility offers classroom, office and laboratory space.

In 2008 the university invested in the Southeast Texas Applied Forensic Facility (STAFS). This applied forensic science facility is dedicated to forensic research and training, in particular anthropological activities. The facility (approximately nine acres) is contained within the 247 acre Center for Biological Field Studies, currently operated by the Department of Biology at Sam Houston State University.

The existing graduate program in forensic science has grown considerably between 2006 and 2012. The number of full-time faculty has almost doubled to support enrollment in the FEPAC-accredited Master’s program.

The Forensic Science Department occupies approximately 7,800 SF of the 37,000 SF facility. Laboratory, administrative and storage space account for approximately 5100, 2200 and 500 SF, respectively. Teaching laboratories are used for both instructional and research purposes.
Since 2007, SHSU has made considerable capital investments in scientific equipment, totaling more than $1,000,000. For the doctoral program to be competitive, additional investments totaling $600,000 would be required over the first two years to support research in forensic molecular biology (DNA sequencer), trace evidence (scanning electron microscope) and other universal forensic instrumental techniques (mass spectrometry).

D. Support Staff

The Forensic Science Department is currently supported by one full-time staff member who provides a combination of both technical and administrative support. Staff within the College of Criminal Justice provide supplemental administrative support as needed. One additional full-time employee to provide both technical (scientific) and administrative support will be required. Funding for this position will come from new and reallocated budget lines.

E. Five-Year Costs and Funding Sources Summary

On the attached forms, provide estimates of new costs to the institution related to the proposed program and provide information regarding sources of the funding that would defray those costs. Use the Program Funding Estimation Tool found on the Coordinating Board web site (www.thecb.state.tx.us/newprogramscertificates) and attach a saved copy of the completed Excel spreadsheet to your application.

V. Institutional Readiness

A. Strategic Plan

Describe how the proposed doctoral program fits into the institution’s overall strategic plan, and provide the web link to the institution’s strategic plan.

The doctoral degree in Forensic Science emerged from the University’s academic plan and is the highest graduate program priority for the University. It builds on the strength of the programs in the nationally recognized College of Criminal Justice. It is a natural extension of the excellent forensic programs already housed in the college. SHSU’s strategic goals include the development and delivery of rigorous, contemporary curricula and optimizing the mix of academic programs in an effort to maximize research potential. The proposed doctoral program at SHSU is consistent with these strategic goals.

In addition to implementing a rigorous contemporary curricula, the program will significantly enhance research capability at the institution. Research contributions in the area of forensic science are already strong, but the doctoral program affords an opportunity for expanded research, additional external funding opportunities and continued growth. The PhD program in Forensic Science allows SHSU to capitalize on the existing MS program to achieve what is most likely to be a nationally recognized program. Just as the MS in Forensic Science was the first graduate program to be accredited by FEPAC in Texas, development of a doctoral program at a time when there is so much focus on forensic reform, education and training at the national level, is most timely.

The institution’s strategic plans can be found at the following web link: http://www.shsu.edu/~pre_www/documents/StrategicPlanSummaryComplete10%202012.pdf
B. Related and Supporting Programs
Use this table to list all undergraduate and graduate programs within the same 2-digit CIP code that would support the proposed program. Include enrollment, number of graduates, graduation rate, and average time to degree for the last five years. Calculate the program graduation rate starting at the time a student takes the first course in his or her major outside the core curriculum. (Add and delete rows as needed.)

Programs in chemistry and biology do not share the same 2-digit CIP code, but are clearly relevant since they would support the program.

<table>
<thead>
<tr>
<th></th>
<th>Fall 07</th>
<th>Fall 08</th>
<th>Fall 09</th>
<th>Fall 10</th>
<th>Fall 11</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enrollment</strong> (Fall only)</td>
<td>27</td>
<td>24</td>
<td>23</td>
<td>27</td>
<td>22</td>
</tr>
<tr>
<td><strong># of Graduates</strong> (Fall to Summer)</td>
<td>14</td>
<td>13</td>
<td>11</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td><strong>2 Year Graduation Rate</strong></td>
<td>100.0%</td>
<td>92.3%</td>
<td>91.7%</td>
<td>91.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>5 Year Graduation Rate</strong></td>
<td>100.0%</td>
<td>87.5%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
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<tr>
<td><strong>Avg. Time to Degree (# of Semesters)</strong></td>
<td>5.2</td>
<td>5.0</td>
<td>5.0</td>
<td>5.3</td>
<td>5.8</td>
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</table>

MS in Forensic Science 43010600

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Enrollment</strong> (Fall only)</td>
<td>27</td>
<td>24</td>
<td>23</td>
<td>27</td>
<td>22</td>
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<tr>
<td><strong># of Graduates</strong> (Fall to Summer)</td>
<td>14</td>
<td>13</td>
<td>11</td>
<td>12</td>
<td>15</td>
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<tr>
<td><strong>2 Year Graduation Rate</strong></td>
<td>100.0%</td>
<td>92.3%</td>
<td>91.7%</td>
<td>91.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>5 Year Graduation Rate</strong></td>
<td>100.0%</td>
<td>87.5%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Avg. Time to Degree (# of Semesters)</strong></td>
<td>5.2</td>
<td>5.0</td>
<td>5.0</td>
<td>5.3</td>
<td>5.8</td>
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### MS in Biology 26010100

<table>
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</thead>
<tbody>
<tr>
<td>Enrollment</td>
<td>24</td>
<td>28</td>
<td>32</td>
<td>35</td>
<td>38</td>
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<tr>
<td>(Fall only)</td>
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<tr>
<td>F07-Summer08</td>
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<tr>
<td>F08-Summer09</td>
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<tr>
<td>F09-Summer10</td>
<td></td>
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</tr>
<tr>
<td>F10-Summer11</td>
<td></td>
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<tr>
<td>F11-Summer12</td>
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<tr>
<td># of Graduates</td>
<td>6</td>
<td>5</td>
<td>9</td>
<td>5</td>
<td>11</td>
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<td>(Fall to Summer)</td>
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<tr>
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<td></td>
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</tr>
<tr>
<td>F09 Graduated until Sum11</td>
<td></td>
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<td></td>
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<tr>
<td>2 Year Graduation Rate</td>
<td>28.6%</td>
<td>16.7%</td>
<td>38.5%</td>
<td>8.3%</td>
<td>40.0%</td>
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<td>Entering Cohort</td>
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</tr>
<tr>
<td>F03 Graduated until Sum08</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>F04 Graduated until Sum09</td>
<td></td>
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<tr>
<td>F05 Graduated until Sum10</td>
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<td></td>
</tr>
<tr>
<td>F06 Graduated until Sum11</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>F07 Graduated until Sum12</td>
<td></td>
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<tr>
<td>5 Year Graduation Rate</td>
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<td>33.3%</td>
<td>50.0%</td>
<td>71.4%</td>
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<td># of Semesters for students who Graduated in F10 - Sum11</td>
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<tr>
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<tr>
<td>Avg. Time to Degree (# of Semesters)</td>
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<td>8.8</td>
<td>7.2</td>
<td>9.4</td>
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### MS in Chemistry (40050100)

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<th>Fall 10</th>
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<td>9</td>
<td>11</td>
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<tr>
<td>(Fall only)</td>
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<tr>
<td>F07-Summer08</td>
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<tr>
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</tr>
<tr>
<td># of Graduates</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>(Fall to Summer)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Entering Cohort</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>F06 Graduated until Sum08</td>
<td></td>
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<tr>
<td>F07 Graduated until Sum09</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>F08 Graduated until Sum10</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>F09 Graduated until Sum11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F10 Graduated until Sum12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Year Graduation Rate</td>
<td>50.0%</td>
<td>33.3%</td>
<td>100.0%</td>
<td>NA</td>
<td>62.5%</td>
</tr>
<tr>
<td>Entering Cohort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F03 Graduated until Sum08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F04 Graduated until Sum09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F05 Graduated until Sum10</td>
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<td></td>
</tr>
<tr>
<td>F06 Graduated until Sum11</td>
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<td>F07 Graduated until Sum12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Year Graduation Rate</td>
<td>100%</td>
<td>50.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>BS in Chemistry (40050100,40051000,40059911)</td>
<td>Fall 07</td>
<td>Fall 08</td>
<td>Fall 09</td>
<td>Fall 10</td>
<td>Fall 11</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Enrollment (Fall only)</td>
<td>238</td>
<td>263</td>
<td>290</td>
<td>317</td>
<td>334</td>
</tr>
<tr>
<td># of Graduates (Fall to Summer)</td>
<td>15</td>
<td>17</td>
<td>35</td>
<td>29</td>
<td>23</td>
</tr>
<tr>
<td>Entering Cohort F04 Graduated until Sum08</td>
<td>17.3</td>
<td>15.4</td>
<td>13.2</td>
<td>12.9</td>
<td>14.6</td>
</tr>
<tr>
<td>Avg. Time to Degree (# of Semesters)</td>
<td>6.0</td>
<td>6.5</td>
<td>6.5</td>
<td>7.0</td>
<td>6.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BS in Biology 26010100</th>
<th>Fall 07</th>
<th>Fall 08</th>
<th>Fall 09</th>
<th>Fall 10</th>
<th>Fall 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment (Fall only)</td>
<td>511</td>
<td>550</td>
<td>683</td>
<td>868</td>
<td>981</td>
</tr>
<tr>
<td># of Graduates (Fall to Summer)</td>
<td>61</td>
<td>71</td>
<td>79</td>
<td>59</td>
<td>78</td>
</tr>
<tr>
<td>Entering Cohort F04 Graduated until Sum08</td>
<td>12.8%</td>
<td>18.6%</td>
<td>15.5%</td>
<td>10.4%</td>
<td>11.2%</td>
</tr>
</tbody>
</table>
C. Graduation Rates

1. Confirm that the six-year undergraduate graduation rate is at or above the statewide average, minus the students from Texas A&M University and The University of Texas at Austin. The six-year graduation rate is defined as the percentage of first-time degree-seeking students enrolled in a minimum of 12 SCH their first fall semester who have graduated from the same institution or another Texas public or independent institution in six years. It includes students enrolled in developmental education courses, but it excludes students who transfer in from a community college. The data for each university can be found on the Coordinating Board’s web site at www.thecb.state.tx.us/newprogramscertificates.

The six-year undergraduate graduation rate at Sam Houston State University is 60.3%, above the statewide average of 58.3% (and the statewide average excluding UT-Austin and TAMU of 50.2%).

D. Existing Doctoral Programs

Provide the web link(s) for the 18 Characteristics of Doctoral Programs for each of the institution’s existing doctoral programs. Describe how the data represent the current quality of the institution’s existing doctoral programs. Describe how existing closely related doctoral programs would enhance and complement the proposed program.

(a) The web link for the 18 Characteristics of Doctoral Programs for each of Sam Houston State University’s existing doctoral programs can be found at: http://www.shsu.edu/~grs/www/18Characteristics.html

(b) The University currently has five doctoral programs in operation:

- PhD in Criminal Justice
- PhD in Clinical Psychology
- EdD in Educational Leadership
- PhD in Counselor Education
• EdD in Reading

The data available on the 18 Characteristics demonstrate that each program supports rigorous and high quality doctoral education. Each program is represented with strong numbers of graduates, graduation rates, student and faculty publications, and other quality indicators. Although the programs differ in scope, size, purpose, and age, each existing doctoral program demonstrates a commitment to programmatic rigor while also demonstrating commitment to the success of students enrolled in the program.

(c) One of the existing doctoral programs resides in the College of Criminal Justice. The doctoral program in forensic science will complement the PhD in criminal justice and afford additional opportunities for intellectual collaboration, external funding and interdisciplinary research. There is a growing national interest in the social science-forensic science interface and existing collaborations between the departments of forensic science, criminal justice and criminology will benefit directly from the proposed doctoral program.

VI. Required Appendices

A. Course Descriptions and Prescribed Sequence of Courses
B. Curricula Vitae for Core Faculty
C. Curricula Vitae for Support Faculty
D. Five-Year Faculty Recruitment Plan/Hiring Schedule
E. Institution’s Policy on Faculty Teaching Load
F. Itemized List of Capital Equipment Purchases During the Past Five Years
G. Librarian’s Statement of Adequate Resources
H. Articulation Agreements (if relevant) with Partner Institutions – Not applicable
I. Action Plan for Improving Undergraduate Success Measures (if relevant) – Not applicable

VII. Recommended Appendices (as applicable)

A. Requests for the addition of new courses
B. Specific Clinical or In-Service Sites to Support the Program: Current internship agencies illustrating existing academic-industrial partnerships
C. Letters of support

---

20 “Equipment” has the meaning established in the Texas Administrative Code §252.7(3) as items and components whose cost are over $5,000 and have a useful life of at least one year.
Signature Page

1. **Adequacy of Funding** – The chief executive officer shall sign the following statement:

   I certify that the institution has adequate funds to cover the costs of the new program. Furthermore, the new program will not reduce the effectiveness or quality of existing programs at the institution.

   ____________________________  _______________________
   Chief Executive Officer                Date

2. **Board of Regents Approval** – A member of the Board of Regents or designee shall sign the following statement:

   On behalf of the Board of Regents, I certify that the Board of Regents has approved the program.

   ____________________________  _______________________
   Board of Regents (Designee)               Date of Approval

3. **Board of Regents Certification of Criteria for Commissioner or Assistant Commissioner Approval** – For a program to be approved by the Commissioner or the Assistant Commissioner for Academic Affairs and Research, the Board of Regents or designee must certify that the new program meets the criteria under Texas Administrative Code (TAC) Section 5.50 (b) and (c). The criteria are:

   **TAC §5.50(b):**
   
   (1) be within the institution's current Table of Programs;
   (2) have a curriculum, faculty, resources, support services, and other components of a degree program that are comparable to those of high quality programs in the same or similar disciplines at other institutions;
   (3) have sufficient clinical or in-service sites, if applicable, to support the program;
   (4) be consistent with the standards of the Commission of Colleges of the Southern Association of Colleges and Schools and, if applicable, with the standards or discipline-specific accrediting agencies and licensing agencies;
   (5) attract students on a long-term basis and produce graduates who would have opportunities for employment; or the program is appropriate for the development of a well-rounded array of basic baccalaureate degree programs at the institution;
   (6) not unnecessarily duplicate existing programs at other institutions;
   (7) not be dependent on future Special Item funding;
   (8) have new five-year costs that would not exceed $2 million.

   **TAC §5.50 (c):**
   
   (1-2) be in a closely related discipline to an already existing doctoral program(s) which is productive and of high quality;
   (3) have core faculty that are already active and productive in an existing doctoral program;
   (4) have received no objections from other institutions during the 30-day comment period; and
   (5) have a strong link with workforce needs or the economic development of the state.

   On behalf of the Board of Regents, I certify that the new program meets the criteria specified under TAC Section 5.50 (a and b).
<table>
<thead>
<tr>
<th>Board of Regents (Designee)</th>
<th>Date</th>
</tr>
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</table>

```
## COSTS TO THE INSTITUTION OF THE PROGRAM/ADMINISTRATIVE CHANGE

*Note:* Use this chart to indicate the dollar costs to the institution that are anticipated from the change requested.

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Cost Sub-Category</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
<th>4th Year</th>
<th>5th Year</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Salaries</td>
<td>(New)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Reallocated)</td>
<td>$169,518</td>
<td>$174,604</td>
<td>$179,842</td>
<td>$185,237</td>
<td>$190,794</td>
<td>$899,995</td>
</tr>
<tr>
<td>Program Administration</td>
<td>(New)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Reassignments)</td>
<td>$30,360</td>
<td>$31,271</td>
<td>$32,210</td>
<td>$33,175</td>
<td>$34,170</td>
<td>$161,186</td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td>(New)</td>
<td>$60,000</td>
<td>$60,000</td>
<td>$80,000</td>
<td>$140,000</td>
<td>$140,000</td>
<td>$480,000</td>
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<tr>
<td></td>
<td>(Reallocated)</td>
<td>$30,000</td>
<td>$60,000</td>
<td>$100,000</td>
<td>$100,000</td>
<td>$100,000</td>
<td>$390,000</td>
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<tr>
<td>Clerical/Staff</td>
<td>(New)</td>
<td>$16,500</td>
<td>$16,995</td>
<td>$17,505</td>
<td>$18,030</td>
<td>$18,571</td>
<td>$87,601</td>
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<tr>
<td></td>
<td>(Reallocated)</td>
<td>$16,500</td>
<td>$16,995</td>
<td>$17,505</td>
<td>$18,030</td>
<td>$18,571</td>
<td>$87,601</td>
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<tr>
<td>Supplies &amp; Materials</td>
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<td>$2,280</td>
<td>$4,560</td>
<td>$6,840</td>
<td>$9,000</td>
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<td>Library &amp; IT Resources*</td>
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<tr>
<td>Equipment</td>
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<td>$300,000</td>
<td>$300,000</td>
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<td></td>
<td></td>
<td>$600,000</td>
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<td></td>
</tr>
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<td>Other (Identify)</td>
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<td>$6,000</td>
<td>$6,000</td>
<td>$6,000</td>
<td>$7,000</td>
<td>$7,000</td>
<td>$32,000</td>
</tr>
<tr>
<td>TOTALS</td>
<td></td>
<td>$631,158</td>
<td>$670,425</td>
<td>$538,902</td>
<td>$612,442</td>
<td>$618,575</td>
<td>$3,071,502</td>
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</tbody>
</table>

*IT = Instructional Technology

**Explanations:** Reallocated faculty salaries and reassignments for program and administration are the portion of core and support faculty and existing program administration that that will be dedicated to delivery of the doctoral program. The College of Criminal Justice will reallocate staff from the Criminal Justice Center to support the program as well as two research assistantships. Faculty, administration, and staff cost includes salaries and wages plus 32% fringe benefits and annual salary increases of 3%. Equipment items include DNA analyzers and related equipment. The "other" category includes six $1,000 scholarships awarded annually.
ANTICIPATED SOURCES OF FUNDING

*Note: Use this chart to indicate the dollar amounts anticipated from various sources to cover any and all new costs to the institution as a result of the proposed doctoral program. Use the Non-Formula Sources of Funding form to specify as completely as possible each non-general revenue source.

<table>
<thead>
<tr>
<th>Funding Category</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
<th>4th Year</th>
<th>5th Year</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Formula Income*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$1,555,653</td>
</tr>
<tr>
<td>II. Other State Funding</td>
<td>$75,000</td>
<td>$75,000</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$300,000</td>
</tr>
<tr>
<td>III. Reallocation of Existing Resources</td>
<td>$252,753</td>
<td>$269,470</td>
<td>$276,156</td>
<td>$283,042</td>
<td>$290,134</td>
<td>$1,371,555</td>
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<td>IV. Federal Funding (In-hand only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. Other Funding</td>
<td>$60,000</td>
<td>$60,000</td>
<td>$60,000</td>
<td>$60,000</td>
<td>$60,000</td>
<td>$300,000</td>
</tr>
<tr>
<td>TOTALS</td>
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<td>$746,198</td>
<td>$945,559</td>
<td>$1,043,228</td>
<td>$3,527,208</td>
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</table>

*Please use the Formula Funding Calculation Tool on the Coordinating Board web site to estimate income from the State. See also the Guidelines for Institutions Submitting Proposals for New Doctoral Programs document found on the Coordinating Board web site for additional information.
# Non-formula Sources of Funding

*Note:* Use this form to specify as completely as possible each of the non-formula funding sources for the dollar amounts listed on the Anticipated Sources of Funding form.

<table>
<thead>
<tr>
<th>Funding Category</th>
<th>Non-Formula Funding Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>II. Other State Funding</strong></td>
<td><strong>#1</strong> The source of these funds will be the Higher Education Assistance Funds to be used for equipment purchases.</td>
</tr>
<tr>
<td><strong>III. Reallocation of Existing Resources</strong></td>
<td><strong>#1</strong> Reallocation of existing resources will involve reassigning faculty and staff time spent on existing programs to the doctoral program. The proportion reassigned reflects the level of effort required for the delivery of a quality program. Of the total full-time forensic science faculty resources currently available, about 50% would remain dedicated to the MSFS and 50% to the Ph.D. in forensic science. Staff resources will be reallocated from the Criminal Justice Center and the College of Criminal Justice. The CJC has staff resources and funding available for these reallocations/reassignments.</td>
</tr>
<tr>
<td></td>
<td><strong>#2</strong> The College of Criminal Justice will reallocate five graduate research assistantships from the CJ Ph.D. program to the FS Ph.D. program.</td>
</tr>
<tr>
<td><strong>IV. Federal Funding</strong></td>
<td><strong>#1</strong></td>
</tr>
<tr>
<td></td>
<td><strong>#2</strong></td>
</tr>
<tr>
<td><strong>V. Other Funding</strong></td>
<td><strong>#1</strong> Funds in this category will come from a variety of scholarship and endowment funds that are available to support students in the FS Ph.D.</td>
</tr>
<tr>
<td></td>
<td><strong>#2</strong></td>
</tr>
</tbody>
</table>
Appendix A

Course Descriptions and Prescribed Sequence of Courses
Required Courses

FORENSIC INSTRUMENTAL ANALYSIS (FORS 5445)
This course is devoted to the analytical methodology, approaches, techniques and instrumentation for forensic instrumental applications. A wide variety of techniques that are used in a number of forensic disciplines are covered. Well established methods and novel approaches are discussed. Four-hour laboratory. Credit 4.

PATTERN AND PHYSICAL EVIDENCE CONCEPTS (FORS 5360)
This course introduces the concept of physical evidence, evidence collection, quality assurance, and chain custody procedures. Concepts, theories, and principles used in forensic analysis of material and pattern evidence will be reviewed. Recent developments in the techniques applied in forensic or material and pattern evidence will be discussed. Four-hour laboratory. Credit 3.

CONTROLLED SUBSTANCE ANALYSIS (FORS 5117)
This course will introduce the concepts, theories, and principles used in forensic analysis of controlled substances. Methods of forensic analysis of drugs, including pill identification, microscopic examination, color tests, microcrystalline tests, thin layer chromatography (TLC), Fourier transform infrared spectroscopy (FTIR) and gas chromatography-mass spectrometry (GC-MS) will be explored. The source, origin, chemical properties and clandestine manufacture of controlled substances will also be discussed. Students will gain a fundamental understanding of controlled substance analysis in accordance with the standard of practice in an accredited crime laboratory. Credit 1.

FORENSIC BIOLOGY (FORS 5440)
This course will cover the DNA analysis of biological evidence. Different DNA extraction methods will be discussed as well as techniques for quantification of minimal amounts of DNA and strategies for the analysis of PCR products (STRs, Y-STRs, and mitochondrial DNA). General knowledge of population genetics will be provided to generate the final report. Four-hour laboratory. Credit 4.

TRACE EVIDENCE AND MICROSCOPIC ANALYSIS (FORS 5335)
This course will review the classifications and characteristics of trace evidence and provide hands-on experience in trace evidence and microscopic examination techniques encountered in a crime laboratory. A wide variety of chromatographic, spectroscopic, and microscopic techniques used for the analysis of fibers, hair, gun shot residue (GSR), ink, paints, explosives, and narcotics will be investigated. Prerequisite: FORS 5445. Four-hour laboratory. Credit 4.

FORENSIC TOXICOLOGY (FORS 5446)
This course will provide information on the origins, history, forms, physico-chemical characteristics, and effects of drugs and poisons of forensic interest. The course also includes the qualitative and quantitative analysis of compounds from biological and non-biological matrices and provides hands-on experience with chromatographic and spectroscopic techniques that are widely accepted in forensic laboratories. Prerequisite: FORS 5445. Four-hour laboratory. Credit 4.

INTERNERSHIP IN FORENSIC SCIENCE (FORS 6371)
This is a ten week full-time internship in an approved forensic science laboratory. This opportunity allows graduate students to apply their theoretical knowledge and practical skills and abilities in a forensic science setting. Credit 3.

SEMINAR IN FORENSIC SCIENCE (FORS 5116)
This graduate seminar exposes students to a wide variety of original research and emerging topics in forensic science. Students develop both oral and written communication skills and a wider scientific awareness. Credit 1.
QUALITY ASSURANCE AND ETHICS IN FORENSIC SCIENCE (FORS 6224)
This course will introduce the concepts and procedures associated with quality assurance and ethical conduct in forensic science. Credit 2.

LAW AND FORENSIC SCIENCES (FORS 5226)
This course will provide an overview of the law-forensic science interface. This includes legal concepts of admissibility of evidence and proof, rules of evidence, structure and hierarchy of criminal courts, and expert testimony. The course also includes direct and cross examination of students in a moot court setting. Credit 2.

FORENSIC SCIENCE CAPSTONE COURSE (FORS 6114/ FORS 6394)
The capstone experience allows students to formally apply their acquired knowledge and skills in forensic science. This course consists of an independent research project which culminates in a formal written report or manuscript. Additionally, students are required to present their findings orally in a public forum. Credit 1.

RESEARCH METHODS (FORS 7331)
This course offers an overview of research design and methods. This course will provide students the opportunity to discover, structure, and formulate research questions. Through this process students will come to understand the many ways in which researchers can acquire knowledge and insights using a wide variety of research methods. Credit 3.

SCIENTIFIC COMMUNICATIONS (FORS 7332)
In this course students will apply fundamentals of research, design and methods to grant writing and scientific communication. In fulfillment of the course requirements, students must write and defend an NIJ or NIH grant proposal in addition to reviewing and editing proposals and scientific communications. Students must demonstrate competence orally and in writing. Credit 3.

FORENSIC LABORATORY MANAGEMENT (FORS 7390)
This course will help prepare students for administrative and leadership roles in public or private sector forensic science laboratories. Key issues include the quality management system, organizational efficiency, fiscal, personnel and resource management, regulation, certification and accreditation. Credit 3.

DISSERTATION (FORS 8099)
Electives

FORENSIC ANTHROPOLOGY (FORS 5333)
This course equips students with the methodologies and applications of forensic anthropology. It includes extensive hands-on training of the human skeletal system. Students learn and apply the methods used in building a human biological profile, which includes the determination of sex, age, and race based on skeletal features. The identification of skeletal pathologies and trauma will also be introduced. Three-hour laboratory. Credit 3.

FORENSIC ENTOMOLOGY (BIOL 5305)
The methods and materials necessary for use of insects as forensic evidence in legal investigation will be discussed. Laboratory included. Prerequisite: Introductory Entomology course and graduate standing. Credit 3.

ADVANCED FORENSIC DNA (FORS 5361)
This course will cover the practical DNA analysis of extremely degraded biological evidence including hair shafts, nails, teeth and bones. Different extraction methods will be discussed and practically applied as well as techniques for quantification of minimal amounts of DNA, alternative strategies for DNA analysis (Low Copy Number, SNPs, Y-STRs) and DNA sequencing (mtDNA), interpretation of results, biostatistics, and standard operation procedures. Prerequisite: FORS 5440. Four-hour laboratory. Credit 3.

STATISTICAL GENETICS (FORS 5215)
This course will focus the understanding of the mechanisms (genetic variation, genetic drift, natural selection, two-locus dynamics, nonrandom mating and quantitative genetics) in the movement of genetic material through the space-time frame and concepts related to evolution. Students will analyze and interpret the results from human microsatellite population databases through genetic software. Prerequisite: FORS 5440. Credit 2.

ADVANCED FORENSIC TOXICOLOGY (FORS 6346)
This course will focus on advanced principles and practice in forensic toxicology, in particular advanced analytical, methodological and interpretive issues. Students will apply their knowledge of basic forensic toxicology principles to a variety of analytical and interpretive topics relevant to behavioral and postmortem toxicology including but not limited to impaired driving, sexual assault and death investigation. Prerequisite: FORS 5446. Credit 3.

ADVANCED FORENSIC CHEMISTRY (FORS 6335)
This course will cover novel scientific techniques in crime scene chemistry and crime lab chemistry. Non-destructive optical methods developed for sensing or identifying physical evidence is particularly emphasized in this course. New development in chromatographic, spectroscopic and microscopic techniques for the analysis of fibers, hair, gunshot residue, ink, paints, glass, explosives and narcotics will also be introduced. Prerequisite: FORS 5335, FORS 5445. Credit 3.

FIREARMS AND TOOLMARKS (FORS 5114)
This course provides a broad overview of firearm and toolmark identification for forensic purposes. Terminology, function testing and ammunition will be discussed, together with class and individual characteristics, identification criteria and instrumentation. Determination of caliber/gauge, trajectory and distance determination will also be covered. Basic toolmark nomenclature, class and individual characteristics, fracture matching and serial number restoration will also be addressed. Credit 1

STATISTICS FOR CRIMINAL JUSTICE RESEARCH (CRIJ 6385)
Review of descriptive and graphical techniques; probability and sampling theory; the normal curve and statistical inference; Central Limit Theorem; Chi-square, T and F distributions; analysis of variance and linear regression.
TECHNIQUES FOR CRIME SCENE INVESTIGATION (FORS 5231)
This course provides a comprehensive review of contemporary techniques for the identification, collection, preservation, and evaluation of evidence found at the crime scene. Crime scene reconstruction and the application of CSI theory and research in applied scenarios are discussed. Four-hour laboratory. Credit 2.

ANALYTICAL SPECTROSCOPY (CHEM 5368)
Theory and application of selected areas of spectroscopy commonly used in qualitative and quantitative analysis are covered. Topics include atomic and molecular spectroscopy, mass spectrometry, laser analytical methods, fluorescence, phosphorescence, and chemiluminescence and their application to environmental, atmospheric, and bioanalytical problems. Prerequisite: CHM 440. Credit 3.

ADVANCED BIOCHEMISTRY I (CHEM 5372)
The chemical structure and the biological functions and controls of proteins are reviewed. Proteins to be considered include enzymes, transport proteins, and structural proteins. Protein biosynthesis and recombinant DNA technology are also discussed. Credit 3.

ELECTRON MICROSCOPY (BIOL 5340)
This course is designed to teach students the methods of preparing specimens for electron microscope analysis and to use the electron microscope as a tool to conduct research. Students will become competent in using the electron microscope for visual analysis or chemical elemental analysis. Prerequisites: 12 hours advanced biology. Credit 3.

ADVANCED GENETICS (BIOL 5391)
This is an advanced study of the principles of heredity and the nature and function of the gene. Emphasis will be on molecular genetics with special attention to recent advances in DNA technologies. Laboratory studies include restriction enzyme analyses by electrophoresis, gene cloning, mutagenesis and chromosome banding. Three-hour laboratory. Prerequisite: Introductory Genetics with grade of C or better and organic chemistry. Credit 3.

NEUROPSYCHOPHARMACOLOGY (PSYC 5361)
This course examines the field of behavioral pharmacology: the systematic study of the effects of drugs on behavior and the way in which behavioral principles can help in understanding how drugs work. The focus is on the neurophysiological mechanisms of action of various psychoactive drugs and on the various neurotransmitter systems within the nervous system. Credit 3.

BEHAVIORAL GENETICS (FORS 6333)
This course is intended to provide students with an understanding of behavior genetics and the influence of genes and the environment on emotion, personality and behavior in humans and animals. Credit 3.

PRACTICUM (FORS 7389)
The doctoral practicum in forensic science is undertaken during the final year of study. This experience is designed to bridge the gap between academic research and industry. This practicum affords the doctoral student the opportunity to apply the research in a practical setting, adapt technologies for maximal use, appreciate the steps necessary for the implementation of new technology within an accredited environment, and observe the technical and non-technical processes involved. During the practicum students must complete the equivalent of a ten week full-time placement (400 hours) in an approved forensic science laboratory or facility. Prerequisite FORS 6371. Credit 3.

EXPLOSIVE ANALYSIS AND DETECTION (CHEM 7381)
This course will survey the broad field of explosive engineering and detection to include the safety and transportation classifications. Chemical and physical properties, explosive reagents and byproducts and detection techniques will be addressed. It will also include military and improvised devices, post-blast evidence and constitutional aspects of interdiction. Prerequisite: CHEM 4440 or FORS 5445. Credit 3.
SOCIAL SCIENCE OF FORENSICS (FORS 7334)
This course addresses the nexus between social science research on the organization and performance of forensic science. Topics addressed include: 1) the organization of the forensic enterprise, including the structure and functioning of forensic crime labs, 2) performance assessment of forensic systems, organizations and practitioners, 3) sociological, social-psychological, and psychological factors affecting the performance forensic practitioners, and 4) management theory and forensic workplaces and workers.

WARFARE AGENTS (CHEM 7389)
This course will evaluate chemical, biological and radiological warfare agents. These agents will be discussed from a chemical and biochemical standpoint including structure, function, mechanism of action, injury, clinical therapy and recovery. Prerequisite: A minimum of three credit hours of biochemistry or toxicology at the undergraduate or graduate level. Credit 3.

Course Sequence
The prescribed course sequence for required courses is shown below. Examples of full course sequences including core and electives are shown for three distinct areas of specialization.

- FORS 5445  Forensic Instrumental Analysis
- FORS 5360  Pattern and Physical Evidence Concepts
- FORS 5117  Controlled Substances
- FORS 5440  Forensic Biology
- FORS 5335  Trace Evidence And Microscopic Analysis
- FORS 5446  Forensic Toxicology
- FORS 5116  Seminar In Forensic Science
- FORS 6371  Internship
- FORS 6394  Forensic Science Capstone Course (Research)
- FORS 5226  Law And Forensic Science
- FORS 6224  Quality Assurance And Ethics In Forensic Science
- FORS 7330  Research Methods
- FORS 7332  Scientific Communications
- FORS 7390  Forensic Laboratory Management
- FORS 8099  Dissertation
Appendix B

Curricula Vitae for Core Faculty
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Department</th>
<th>University and Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Sarah Kerrigan</td>
<td>Professor &amp; Chair</td>
<td>Department of Forensic Science</td>
<td>College of Criminal Justice</td>
</tr>
<tr>
<td>Dr. David Gangitano</td>
<td>Assistant Professor</td>
<td>Department of Forensic Science</td>
<td>College of Criminal Justice</td>
</tr>
<tr>
<td>Dr. Jorn (Chi-Chung) Yu</td>
<td>Associate Professor</td>
<td>Department of Forensic Science</td>
<td>College of Criminal Justice</td>
</tr>
<tr>
<td>Dr. Sheree Hughes-Stamm</td>
<td>Clinical Assistant Professor</td>
<td>Department of Forensic Science</td>
<td>College of Criminal Justice</td>
</tr>
<tr>
<td>Dr. Joan Bytheway</td>
<td>Associate Professor</td>
<td>Department of Forensic Science</td>
<td>College of Criminal Justice</td>
</tr>
<tr>
<td>Dr. Jasmine Millican (Drake)</td>
<td>Assistant Professor</td>
<td>Department of Forensic Science</td>
<td>College of Criminal Justice</td>
</tr>
</tbody>
</table>
Sarah Kerrigan, Ph.D.
Professor and Chair, Forensic Science
College of Criminal Justice
Sam Houston State University

Degrees Earned

PH.D. in Chemistry, University of British Columbia, Vancouver, Canada, 1997
B.Sc. Hons. Chemistry with Analytical Chemistry and Toxicology. The University of Hull, England, 1992

Peer-Review Publications

Articles


**Book Chapters**


Proceedings


Sarah Kerrigan. Driving Under the Influence of Drugs – Interpretive Strategies: Case Study Illustrations, Southwestern Association of Toxicologists, Houston, TX, March 2006.


Ginger Baker, Janice Yazzie and Sarah Kerrigan. Unusual Tramadol Concentrations in an Accidental Death Involving Poly Drug Use, FBI Symposium, Proceedings of the Society of
Forensic Toxicologists and International Association of Forensic Toxicologists, Washington DC, September 2004.


Sarah Kerrigan. Overview of GHB, Congress of Criminalists on GHB, California Criminalistics Institute, California Department of Justice, Division of Law Enforcement HQ, Sacramento, CA (2000).

Sarah Kerrigan. Analysis of GHB, Related Analogs and Precursors, Congress of Criminalists on GHB, California Criminalistics Institute, California Department of Justice, Division of Law Enforcement HQ, Sacramento, CA (2000).


Artistic Performances
N/A.

Artistic Exhibitions
N/A.

Research Monographs and Technical Reports


**Funded External Grants**

Improved Detection of Synthetic Cathinones ("Bath Salts") in Forensic Toxicology Samples. National Institute of Justice, 2012/2012, $190,227. Principal Investigator: Sarah Kerrigan, Ph.D. (Sam Houston State University).


Detection of Beta-Keto Amphetamines in Biological Samples. Funded by the National Institute of Justice (NIJ)/Forensic Sciences Foundation (FSF), 2011-2012, $6,900. Student Research Grant (Sponsor/Advisor).

Detection of Synthetic Cannabinoids in Biological Samples. Funded by the National Institute of Justice (NIJ)/Forensic Sciences Foundation (FSF), 2010-2011, $6,900. Student Research Grant (Sponsor/Advisor).

Quantitative Analysis of Salvinorin A (Salvia) in Biological Samples. Funded by the National Institute of Justice (NIJ)/Forensic Sciences Foundation (FSF), 2009-2010, $6,900. Student Research Grant.
Work or Professional Experiences

Laboratory Director, SHSU Regional Crime Laboratory (2009-2012)
ASCLD/LAB-International accredited laboratory
Sam Houston State University, The Woodlands, TX.

Director, Forensic Science Program (2006-present)
College of Criminal Justice, Sam Houston State University, Huntsville, TX.

Professor (2009-present)
College of Criminal Justice, Sam Houston State University, Huntsville, TX.

Associate Professor (2006-2009)
College of Criminal Justice, Sam Houston State University, Huntsville, TX.

Bureau Chief, Toxicology (2001-2004).
New Mexico Department of Health, Scientific Laboratory Division, Albuquerque, NM.

California Department of Justice, Bureau Of Forensic Services, Toxicology Laboratory, Sacramento, CA.

Honors and awards

Irving Sunshine Toxicology Award. Awarded by the American Academy For Forensic Sciences in recognition of achievements (2002).


Other Competencies

Texas Forensic Science Commission
Vice Chairman, 2012-present.

Forensic Science Education Program Accreditation Commission
Commissioner, 2009-2011.

Journal of Forensic Sciences
Editorial Advisory Board, 2009-present.

Forensic Toxicology Council
Appointee, 2010-2011.
Scientific Working Group on Toxicology (SWGTOX)
Member/Appointee, 2009-present.

National Science and Technology Council Subcommittee (NSTC) on Forensic Science, Accreditation and Certification Interagency Working Group (IWG), 2010-present.

Texas Forensic Science Commission
Appointed to the Commission by the Texas Attorney General, 2007-present.

Institute for Behavior and Health
Drugged Driving Committee, 2011-present.

Society of Forensic Toxicologists
Executive Board, President, 2011.

Society of Forensic Toxicologists
Executive Board, Vice President, 2010.

Society of Forensic Toxicologists
Executive Board, Secretary, 2008-2009.

Society of Forensic Toxicologists

Houston Police Department, Crime Laboratory Stakeholder Committee, 2007-2009.

California Association of Toxicologists
Past President, 2005-2006.

California Association of Toxicologists
Chair, Bylaws, Records Review and Revision, 2005-present.

American Academy of Forensic Sciences
Steering Committee (Toxicology Section), 2005-present.

Society of Forensic Toxicologists/American Academy of Forensic Sciences
Chair, Drugs and Driving Committee, 2005-2008.

National Safety Council
Highway Traffic Safety Division, Committee on Alcohol and other Drugs (COAD), 2005-present.

American Academy of Forensic Sciences
Chair, Awards and Scholarship Committee (Toxicology Section), 2005-2006.

California Association of Toxicologists
Society of Forensic Toxicologists

Society of Forensic Toxicologists/American Academy of Forensic Sciences
Drugs and Driving Committee, 2004-present.

California Association of Toxicologists
Vice President, 2003-2004.

American Academy of Forensic Sciences
Awards and Scholarship Committee (Toxicology Section), 2003-2004.

Journal of Analytical Toxicology
Editorial Advisory Board, 2003-present.

Society of Forensic Toxicologists
Chair, Education and Outreach Subcommittee, Drug-Facilitated Sexual Assault Committee, 2003-2005.

American Association for Clinical Chemistry

American Association for Clinical Chemistry

Society of Forensic Toxicologists

Society of Forensic Toxicologists
Drug-Facilitated Sexual Assault Committee, 2000-present.

California Association of Toxicologists
Member at Large – North, 2000-2001.

California Association of Toxicologists
David A. Gangitano  
Associate Professor  
College of Criminal Justice  
Sam Houston State University

Degrees Earned  
B.Sc., Chemistry. University of Buenos Aires, Argentina (1992)

Professional Licensure and Certifications  

Peer-Review Publications and Artistic Performances/Exhibitions  
Articles  

**Books**

N/A

**Chapters**

N/A

**Proceedings**


3) “Comparison of Genetic Markers and Developmental Validation of the Multicopy LINE-1 Marker for Use in a Sensitive Real-time Quantification Method”. Jackie Kenline, and David Gangitano, PhD. American Academy of Forensic Sciences meeting, Atlanta, February 2012

4) “A molecular approach: Species composition of the maggot mass in human cadavers in the pineywoods ecoregion of southeastern Texas”. Ashleigh Faris BS, Sibyl Bucheli, PhD, and David Gangitano, PhD. American Academy of Forensic Sciences meeting, Atlanta 2012


13) “Validation of the AMPFISTR MiniFiler PCR amplification kit and its Application to Identify Human Remains From a 1992 Helicopter Crash at the San Diego Police Department Crime

Artistic Performances
N/A

Artistic Exhibitions
N/A

Research Monographs and Technical Reports

Funded External Grants
1) SHSU Enhancement Research Grant 2013-2014 ($15,000). “Discrimination of Pollen Sources Using Pinus STR Profiling”
2) Texas Education Agency Grant-2011-2012 ($300,000). Development of Forensic Science online training course for high school teachers.
3) NlJ/FSF Student Research Grant- 2011-2012. ($7000) “A molecular approach: Species composition of the maggot mass in human cadavers in the pineywoods ecoregion of southeastern Texas”. Ashleigh Faris BS, Sibyl Bucheli, PhD, and David Gangitano, PhD.

Peer-Review Presentations/Posters
3) “Comparison of Genetic Markers and Developmental Validation of the Multicopy LINE-1 Marker for Use in a Sensitive Real-time Quantification Method”. Jackie Kenline, and David Gangitano, PhD. American Academy of Forensic Sciences meeting, Atlanta, February 2012
4) “A molecular approach: Species composition of the maggot mass in human cadavers in the pineywoods ecoregion of southeastern Texas”. Ashleigh Faris BS, Sibyl Bucheli, PhD, and David Gangitano, PhD. American Academy of Forensic Sciences meeting, Atlanta 2012

Work or Professional Experiences
2013-present, Associate Professor, Forensic Science Department, College of Criminal Justice, Sam Houston State University, Huntsville, TX
2007 – 2013, Assistant Professor, Forensic Science Program, College of Criminal Justice, Sam Houston State University, Huntsville, TX
2008 – 2009, Adjunct Assistant Professor of Urology, Baylor College of Medicine-Houston, TX
2005 – 2007, Research Associate, Scott Department of Urology, Baylor College of Medicine-Houston, TX
2003 - 2005, Post-doctoral Associate, Department of Neuroscience, Baylor College of Medicine-Houston, TX

Honors and Awards
Other Competencies
Ibero-American Working Group on DNA Analysis (GITAD), Founding member. 1998-2001
Journal of Forensic and Legal Medicine. Reviewer
American Academy of Forensic Sciences. Associate Member.
Chi Chung Yu (Jorn Yu)
Associate Professor
Department of Forensic Science
College of Criminal Justice
Sam Houston State University

**Degree Earned**
Ph.D. in Chemistry, Carleton University, Ottawa, ON, Canada, 2006
M.S. in Forensic Science, Central Police University, Taiwan, 2000
B.S. in Forensic Science, Central Police University, Taiwan, 1994

**Professional Licensure and Certifications**
Physical Significance of Bloodstain Evidence, Laboratory of Forensic Science, Corning, NY.

**Peer-Review Publications and Artistic Performances/Exhibitions**

**Articles**


Books
N/A

Chapters

Proceedings
Petrikovics, I; Stafford, K; Thompson, D; Jayanna, P; Yu, J. Determining the biomarker cyanide metabolite 2-aminothiazoline-4-carboxylic acid in mice liver after cyanide exposure. Toxicology Letters 2010;196:S295-S296. (Abstracts of the XII International Congress of Toxicology)

Artistic Performance
N/A

Artistic Exhibitions
N/A

Research Monographs and Technical Reports
N/A

Funded External Grants
Marijuana Profiling Using Headspace Solid Phase Microextraction Coupled with Gas Chromatography/Mass Spectrometry, NIJ/FSF (National Institute of Justice/Forensic Science Foundation) Forensic Science Student Research Grant, Student Investigator: Tiffany McCann, 2013. (Funded for 2012-2013) [Competitive, $6K]

The separation of chiral psychedelic amphetamine by molecularly imprinted monolithic polymers, NIJ/FSF (National Institute of Justice/Forensic Science Foundation) Forensic Science Student Research Grant, Student Investigator: Seongshin Gwak, 2010. (Funded for 2010-2011) [Competitive, $4K]

X-ray fluorescence analysis of human bone elements for the identification of origins, Innov-X Systems Academic & Research Relations Grant Award, co-PI, 2008 [Equipment loan].

Opening the black box of NIBIN: A process and outcome evaluation of the use of NIBIN and its effects on criminal investigations, forensics advisor, funded by NIJ (National Institute of Justice) for 2010-2012) [Competitive, $341K].

Develop on-line forensic science certification program for high school teachers, co-PI, TEA (Texas Education Agency) grant. (Funded for 2010-2011) [Non-competitive, $150K].
Peer-Review Presentations/Posters


Gao Y.; Gwak S.; Yu J.C.C. Preparation of molecularly imprinted monolithic polymers as the stationary phase for liquid chromatography. The 64rd American Academy of Forensic Science Annual Scientific Meeting, Feb 20-25, 2012, Atlanta, GA.

Harre N.M.; Pipkin, A.J.; Yu, J.C.C.; Anderson, C.C. Extraction of methamphetamine from postmortem blood samples by molecularly imprinted polymers for selective solid phase extraction. The 64rd American Academy of Forensic Science Annual Scientific Meeting, Feb 20-25, 2012, Atlanta, GA.


Foster, M.; Yu, J.C.C; Stein, D. The use of infrared imaging to facilitate fired cartridge case and bullet comparisons, The 63rd American Academy of Forensic Science Annual Scientific Meeting, Feb 21-26, 2011, Chicago, IL.


Yu, J.C.C.; Petrikovics, I.; Jackson, R.; Stafford, K. Analytical method development for determining the biomarker cyanide metabolite 2-aminothiazoline-4-carboxylic acid in mice liver after cyanide exposure. The Society of Toxicology Annual Meeting, March 7–11, 2010, Salt Lake City, UT.


Kelly, J.D.; Yu, J.C.C. Analysis of non-toxic ammunition by double shot pyrolysis gas chromatography/mass spectroscopy (DY-PY GC/MS), The 62nd American Academy of Forensic Science Annual Scientific Meeting, Feb 22-27, 2010, Seattle, WA.


Jackson, R.; Petrikovics, I. Yu, J.C.C. Molecular imprinted polymer stir bar sorption extraction and electrospray ionization tandem mass spectrometry for the analysis of 2-aminothiazoline-4-carboxylic acid, The 2009 Society of Toxicology Annual Meeting, Baltimore, Maryland, March 15–19, 2009


Winslett, S.; Yu, J.C.C. A hollow fiber assisted ionic liquid surface for stir bar sorptive extraction. The 64th Southwest Regional Meeting of the American Chemical Society, Oct. 1-4, 2008.


**Work or Professional Experience**

2012-present, Associate Professor of Forensic Science, College of Criminal Justice, Sam Houston State University

2008-2012, Assistant Professor of Forensic Science, College of Criminal Justice, Sam Houston State University

2006-2008, Assistant Professor of Chemistry, College of Arts and Science, Sam Houston State University

2006/02-2006/07, Postdoctoral Research Fellow, Health Canada
1999–2002, Forensic scientist, Forensic Science Center, Taipei, Taiwan
1994–1999, Forensic technician, Forensic Science Center, Taipei, Taiwan

**Honors and Awards**
N/A

**Other Competencies**
N/A
Sheree Hughes-Stamm, Ph.D.
Assistant Professor of Forensic Science
College of Criminal Justice
Sam Houston State University

Degrees Earned

PhD. in Forensic Genetics, Bond University, Gold Coast, Australia, 2012
B.Sc. Hons. eq. Human Anatomy and Physiology, The University of Queensland, Brisbane, Australia 1997

Peer-Review Publications


Articles
N/A

Book Chapters
N/A
Sheree Hughes-Stamm, Kevin Ashton, Angela van Daal. 2011. STR Genotyping of Environmentally Challenged Skeletal Samples. The 22nd International Symposium on Human Identification, Washington DC, USA

Mark Barash, Wenji Liu, Sheree Hughes-Stamm, Angela van Daal. 2011 Identification of Single Nucleotide Polymorphisms (SNPs) Involved in the Determination of Physical Appearance. The 22nd International Symposium on Human Identification, Washington DC, USA

Sheree Hughes-Stamm, Kevin Ashton, Angela van Daal. 2010. Assessment of DNA Degradation and the Predictive Genotyping Success of Highly Degraded Samples. The 21st International Symposium on Human Identification, San Antonio, TX, USA


Artistic Performances
N/A.

Artistic Exhibitions
N/A.

Research Monographs and Technical Reports
N/A.

Funded External Grants

Bond University Faculty of Health Science & Medicine Research Grants (2 in 2008)

Bond University Research and Consultancy Services (BURCS/BUGSR) Student Support Scheme Grants (2009 -2011)

Work or Professional Experiences

Assistant Professor, Forensic Science Program (2012-current)
College of Criminal Justice, Sam Houston State University, Huntsville, TX.

Senior Teaching Fellow (2006-2012)
Faculty of Health Sciences and Medicine, Bond University, Gold Coast, Australia

Teaching Fellow (2002-2006)
School of Physiotherapy and Exercise Science, Griffith University, Gold Coast, Australia

Postgraduate Tutor (2000-2001)
Department of Anatomical Sciences, University of QLD, Brisbane, Australia

Research Assistant (1999)
Department of Anatomical Sciences, University of QLD, Brisbane, Australia

Laboratory Technician (1998)
Science Department, University of the Sunshine Coast, Australia

Research Assistant (1997-1998)
Department of Physiology and Pharmacology, University of QLD, Brisbane, Australia
Center for Microscopy and Microanalysis, University of QLD, Brisbane, Australia

Anatomy Tutor (1996)
Department of Anatomical Sciences, University of QLD, Brisbane, Australia
Honors and awards

Australian and New Zealand Forensic Science Society (ANZFSS) National Award, 2012

Bond University Alumni Student Opportunity Award, 2011

Bond University Open Day Graduate Poster Prize, 2009

Australian and New Zealand Forensic Science Society (ANZFSS) Allan Hodda Memorial Award, 2009

Australian Postgraduate Award (APA), 2008

Australian Federation of University Women Fellowship Award, 2001

Australian Society of Reproductive Biology Serono Junior Scientist Award, 1997

Science Faculty Commendation for High Achievement, UQ (GPA>6.0), 1996 & 1997

Golden Key National Honour Society Member For outstanding scholastic achievement (UQ)

Other Competencies

Australian & New Zealand Forensic Science Society (QLD Branch, Steering Committee Member) 2008-2012

American Academy of Forensic Sciences, Trainee Affiliate (2012- current)

American Academy of Forensic Sciences, Student Affiliate (2011- 2012)

Bond University Women’s Network (Steering Committee) (2009-2012)

Australian Federation of University Women (1997-2000)

Advanced Pathology Training Course (1997)
Curriculum Vitae

Joan A. Bytheway, Ph.D.
Associate Professor
Sam Houston State University
Director
Southeast Texas Applied Forensic Science Facility
Sam Houston State University
College of Criminal Justice
Huntsville, Texas 77341
936-294-2310 Office
936-294-2311 Fax
bytheway@shsu.edu

EDUCATION: B.A., 1995 Physical Anthropology, Summa Cum Laude, University of Pittsburgh
Ph.D. 2003 Physical Anthropology, Summa Cum Laude, University of Pittsburgh
“Sex Determination of the Adult Human Fragmented Pelvis Utilizing Euclidean Distance Matrix Analysis”

MAJOR AREA OF ACADEMIC SPECIALIZATION: Forensic Anthropology/ Human Osteology
MINOR AREA OF ACADEMIC SPECIALIZATION: Taphonomy

COURSES TAUGHT:
Introduction to Physical Anthropology
Forensic Anthropology
Human Osteology
Human Anatomy and Physiology
Introduction to Anthropology
Introduction to Forensic Science
Introduction to Physical Anthropology: an Overview
Ethics and Quality Assurance in Forensic Science
Proseminar in Forensic Science

ADDITIONAL EDUCATION:
2012 Advanced Techniques in Forensic Anthropology, University of Tennessee, Knoxville, Tennessee
2012 Use of Radiographic Images in Identification and Trauma Analysis, Syracuse University, Syracuse, New York
2011 Advances in Forensic Anthropology Technology Transition Workshop, North Carolina State University, Raleigh, North Carolina
2010 Current Trends in Forensic Science, Fort Worth, Texas
2010 Trauma I, Syracuse University, Syracuse, New York
2008 New Directions in Forensic Taphonomy – Life after Death, IAFS Triennial Meeting, New Orleans, Louisiana
2007 Transition Analysis: A New Approach to Skeletal Age Estimation for Anthropologists, AAFS 60th Annual Scientific Meeting, Washington D.C.
2001 Human Remains: Search, Recovery and Identification, University of New Orleans

-Bytheway-
2000 Practical Applications in Forensic Anthropology, University of New Orleans
1996 Internship, Allegheny County Coroner’s Office, Pittsburgh, Pennsylvania
1996 Laboratory Methods in Forensic Anthropology, Mercyhurst College, Pennsylvania
1996 Workshop in Forensic Anthropology, University of Southern California

PROFESSIONAL AFFILIATIONS:
• Member, American Academy of Forensic Sciences
• Texas Professional Forensic Anthropologists

GRANTS
2012 CTE Forensic Science Program, Texas Education Agency
2008 Bureau of Justice Travel Scholarship
2008 InnovX-systems X-ray Fluorescence Academic and Research Relations
2008 Southeast Texas Applied Forensic Science Human Decomposition Facility
2008 Enhancement Grant for Research, Sam Houston State University
2008 Research Facility Development Grant, Sam Houston State University
1996 Summer grant, University of Pittsburgh

RESEARCH INTERESTS:
Taphonomy
Geometric Morphometrics in Sex Determination
Trauma

EMPLOYMENT HISTORY:
2008 to present Director, Southeast Texas Applied Forensic Science Facility, Sam Houston State University, Huntsville, Texas
2006 to present Associate Professor, College of Criminal Justice, Forensic Science Department, Sam Houston State University, Huntsville, Texas
2006-2007 Adjunct Professor, Department of Anthropology, University of Houston, Houston, Texas
2005 Forensic Anthropologist/Lab Analyst, Mass Graves, Baghdad, Iraq
2004 Adjunct Faculty, Department of Anthropology, California University of Pennsylvania, Pittsburgh
2002-2004 Research Associate. Primate Research Center, University of Pittsburgh, Greensburg
1997- 2004 Adjunct Faculty, Department of Anthropology, University of Pittsburgh, Greensburg

FIELD/LAB EXPERIENCE:
2012 to present Forensic Anthropologist, Texas Rangers, Texas
2011 to present Forensic Anthropologist, Fort Bend County Sheriff’s Office, Texas
2009 to present Forensic Anthropologist, Valley Forensics, Hidalgo County, Texas
2007 to present Forensic Anthropologist, Montgomery County Sheriff’s Office, Texas
March 2006 to present Forensic Anthropologist. Galveston County Medical Examiner’s Office, Texas
January - July 2005 Forensic Anthropologist. Reconstruction and analysis of skeletal remains

-Bytheway-
July 2005  
of individuals of the Iraqi population found in mass graves. Baghdad, Iraq  
Co-designer. Mass Graves Proposal presented to the United States  
Department of Justice, Washington, D.C.  
April 2005  
Author. Power point presentation presented to all visitors at the Iraqi  
Mass Graves Laboratory. Baghdad, Iraq  
April 2005  
Forensic Anthropologist Lab Analyst participant in Discovery Times  
documentary “A Case Against Saddam” airing June 2005.  
March 2001-2004  
Project Osteologist. Exhumation, reconstruction and analysis (including  
research, cataloguing and record keeping) of Monongahelan Indian  
skeletal remains dating 1300 BP. Coordinated through Carnegie Museum  
and Westmoreland County Archeological Society, Irwin, Pa.  
May 2001-July 2001  
Project Manager. Preparation and burial of human skeletal remains,  
Greensburg, Pa.  
June 2000  
Forensic Anthropologist. Search for missing person and analysis of faunal  
skeletal remains. Westmoreland County Sheriff’s Department,  
Washington, Pa.  

PUBLICATIONS

Peer-Reviewed Journals

Joan A. Bytheway, Nicole C. Larison, Ann H. Ross “Comparison of Atypical and Normal Burn  
Patterns of Human Remains and Recognition of Pre-Cremation Blunt Force Trauma” For Sci Int  
submitted Apr 2013

Jeffrey R. Wozniak, Monte L. Thies, Joan A. Bytheway, William I. Lutterschmidt “A Hydrologic  
Retention System and Water Quality Monitoring Program for a Human Decomposition Research  
Facility: Concept and Design” J Forensic Sci submitted March 2013

Bytheway, JA and SM Pustilnik “Glycoproteinous adhesion deposits by Balanus improvisus on  
human skeletal and dental remains: A case report” J Forensic Sci Jan 2013

JA Aitkenhead-Peterson, CG Owings, MB Alexander, N Larison, JA Bytheway “Mapping the  
extent of human cadaver decomposition islands with soil chemistry” For Sci Int October 2011  
online

Rippley A, NC Larison, KE Moss, JD Kelly, JA Bytheway, “Scavenging Behavior of Lynx rufus  
on Human Remains during the Winter Months of Southeast Texas” J Forensic Sci. March 2012

Rhyu IJ, JA Bytheway, SJ Kohler, H Lange, KJ Lee, J Boklweski, K McCormick, NI Williams, GB  
Stanton, WT Greenough, JL Cameron, “Effects of Aerobic Exercise Training on Cognitive  
Function and Cortical Vascularity in Monkeys” Neuroscience June 2010 Vol 167 (4) pp 1239-  
1248

Lindgren NK, J Kelly, AD Archambeault, S Bucheli, JA Bytheway “Exclusion of forensically  
important flies due to burying behavior by the red imported fire ant (Solenopsis invicta) in  
southeast Texas” For Sci Int. June 2010 online.

-Bytheway-


Thesis

Course Book
“Introduction to Physical Anthropology: An Overview” External Studies Course Book, University of Pittsburgh 1997

ABSTRACTS

ESTIMATION OF THE POSTMORTEM INTERVAL OF HUMAN REMAINS IN A SUBTROPICAL, HUMID ENVIRONMENT USING ACCUMULATED DEGREE-DAYS AND TOTAL BODY SCORING. Steve A. Noser¹, BS, Kevin Derr¹, Ashleigh Gallaway², BS, Angela Rippley¹, Joan A. Bytheway¹, PhD. College of Criminal Justice, Sam Houston State University, 2. Montgomery County Sheriff’s Office, Montgomery County, Texas

STAGES OF DECOMPOSITION OF HUMAN REMAINS IN A SUBTROPICAL HUMID ENVIRONMENT. Ashleigh Gallaway¹, BS, Joan A. Bytheway², PhD. Montgomery County Sheriff’s Office, Montgomery County, Texas¹, College of Criminal Justice, Sam Houston State University, Huntsville Texas

AN ATYPICAL BURN PATTERN ASSOCIATED WITH FORENSICALLY SIGNIFICANT HUMAN REMAINS. Joan A. Bytheway¹, Nicole C. Larison². College of Criminal Justice¹, Sam Houston State University, Department of Biological Sciences², Sam Houston State University.

THE EFFECTS OF AVIAN AND TERRESTRIAL SCAVENGER ACTIVITY ON HUMAN REMAINS IN THE PINY WOODS OF SOUTHEAST TEXAS. Kathryn E. Moss¹, Angela D. Rippley², Joan A. Bytheway². University of Houston, Anthropology Department¹, College of Criminal Justice, Sam Houston State University².

TAPHONOMIC CHANGES OBSERVED ON SKELETAL REMAINS IN SOUTHEAST TEXAS. Charity Owings¹, Nicole C. Larison², Joan A. Bytheway³. Entomology Department, Texas A & M University¹, Department of Biological Sciences, Sam Houston State University², College of

-Bytheway-
INSECT SUCCESSION MODEL FOR SOUTHEAST TEXAS IN EARLY SPRING Jeffrey Kelly¹, Natalie K. Lindgren², Alan D. Archambeault², Sybil R. Bucheli, Ph.D.², and Joan A. Bytheway¹, Sam Houston State University, College of Criminal Justice¹, Department of Biological Sciences².

SOUTHEAST TEXAS APPLIED FORENSIC SCIENCE FACILITY (STAFS) AT SAM HOUSTON STATE UNIVERSITY: A NEW FORENSIC ANTHROPOLOGY HUMAN DECOMPOSITION FACILITY Joan A. Bytheway, Ph.D.*, College of Criminal Justice, Sam Houston State University, Huntsville, Texas, 77341-2525

PRECISION OF COORDINATE LANDMARK DATA ACQUIRED FROM THE OS COXA Joan A. Bytheway, Ph.D.*, College of Criminal Justice, Forensic Science, Sam Houston State University, Huntsville, Texas, 77341-2525; Ann H. Ross, Ph.D., Department of Sociology and Anthropology, NC State University, CB 8107, Raleigh, NC 27695-8107

POSTMORTEM INTERVAL OF SURFACE REMAINS IN SPRING SEASON IN SOUTHEAST TEXAS Katelyn Stafford¹; Nicole Larison², Angela D. Rippley³, Natalie Lindren², Joan Bytheway³, Sam Houston State University, Chemistry Department¹, College of Criminal Justice³, Department of Biological Sciences², Sam Houston State University.

EXCLUSION OF FORENSICALLY IMPORTANT FLIES BY THE RED IMPORTED FIRE ANT (Solenopsis invicto Buren) IN SOUTHEASTERN TEXAS Natalie K. Lindgren², Jeffrey Kelly¹, Alan D. Archambeault², Sibyl R. Bucheli, Ph.D.², Joan A. Bytheway Ph.D.¹, Sam Houston State University, College of Criminal Justice¹, Department of Biological Sciences².

WHAT LIES BENEATH: RE-EXAMINING A COLD CASE HOMICIDE FROM A FORENSIC ANTHROPOLOGICAL PERSPECTIVE: A CASE REPORT Joan A. Bytheway¹, Kathryn Moss², Stephen M. Pustilnik³, Sam Houston State University, College of Criminal Justice¹, University of Houston, Anthropology Department², Galveston County Medical Examiner’s Office³.

SKELETAL REMAINS IN A FLUVIAL ENVIRONMENT: MICROSCOPIC EVIDENCE OF GLYCOPROTEINOUS ADHESIVE OF BALANUS IMPROVISUS ON THE OCCLUSAL SURFACE OF MANDIBULAR TEETH Amanda Johnson¹, Joan A. Bytheway², Stephen M. Pustilnik³, Sam Houston State University, College of Criminal Justice¹,², Galveston County Medical Examiner’s Office³.

FORENSIC LOGISTIC LABORATORY PROCESS OF THE MASS FATALITY UTILIZING SUPPLY-CHAIN OPERATIONS REFERENCE MODEL, J.A. Bytheway¹, R.D. Bytheway², Criminal Justice, Sam Houston State University¹, Satellite Logistics Group, Houston, Texas².


SEX DETERMINATION OF THE ADULT HUMAN FRAGMENTED PELVIS USING EUCLIDEAN DISTANCE MATRIX ANALYSIS J.A. Bytheway, Anthropology, University of Pittsburgh.

TRAUMA, PATHOLOGY, AND NON-METRIC VARIANTS IN A MONONGAHELAN INDIAN -Bytheway-

TECHNICAL REPORTS
Forensic Anthropology Reports 2009 to present Valley Forensics P.L.L.C., McAllen, Texas
Forensic Anthropology Reports 2009 to present Montgomery County Sheriff’s Office, Conroe, Texas
Forensic Anthropology Reports 2006 to present Galveston County Medical Examiner’s Office, Texas City, Texas

PRESENTATIONS
May 2013 Advanced Crime Scene Investigation for Law Enforcement, STAFS, Sam Houston State University
June 2013 Advanced Crime Scene Investigation for Forensic Science High School Teachers, STAFS, Sam Houston State University
June 2012 Advanced Crime Scene Investigation for Forensic Science High School Teachers, STAFS, Sam Houston State University, Huntsville, Texas
March 2012 Guest Speaker, College of Humanities, Sam Houston State University, Huntsville, Texas
March 2012 Klein-Collins High School Forensic Anthropology, Spring Texas
February 2012 An Atypical Burn Pattern Associated With Forensically Significant Human Remains, Oral Presentation, American Academy of Forensic Sciences

-Bytheway-
June 2011  Annual Meeting, Atlanta, Georgia
Crime Scene Investigation for Forensic Science High School Teachers,
Sam Houston State University, Huntsville, Texas

March 2010  Advanced Techniques in Crime Scene Investigation, Short Course, Sam
Houston State University, Huntsville, Texas

September 2009 Advanced Techniques in Crime Scene Investigation, Short Course, Sam
Houston State University, Huntsville, Texas

June 2009  Skeletal Remains Recovery Training, Texas Division of the International
Association for Identification, Fort Worth, Texas

June 2007  “Forensic Science” Criminal Justice Summer Camp, Sam Houston State
University, Huntsville, Texas

September 2006  “Forensic Anthropology” Sam Houston State University, Huntsville, Texas
January 2006  “Voices out of the Desert: Victims of Saddam Hussein Finally Speak”,
University of Pittsburgh, Greensburg

January 2006  “Forensic Anthropology, Mass Graves in Iraq” Greensburg Rotary Club,
Greensburg, Pennsylvania

December 2005  “Mass Graves in Iraq” Hohnsberger Live, Television broadcast

December 2004  “The Gift of So Many: Bioarchaeology at the Consol Site”

July 2004  “Forensic Art: Facial Reconstruction”, California University of
Pennsylvania

SERVICES

May 2013  Master's Thesis Committee Member, Department of Anthropology,
University of Houston, Houston, Texas

May 2012  Master's Thesis Committee Member, Department of Anthropology,
University of Houston, Houston, Texas

February 2012  Moderator, Physical Anthropology Section, American Academy of
Forensic Sciences Annual Meeting, Atlanta, Georgia

September 2012  Mass Fatality Management Committee Member, Montgomery County,
Texas

Aug 2011-May 2012  Curriculum Committee, Member, College of Criminal Justice, Sam
Houston State University

Aug 2011-May 2012  Women's Advisory Committee, Member, Sam Houston State University

Feb 2011- present  Peer Reviewer, Journal of Forensic Sciences

Feb 2011  Defensor Pacem Committee Member, College of Criminal Justice, Sam
Houston State University

Dec 2010  Tarrant County Medical Examiner's office “Current Trends in Forensic Science
Annual Conference” Fort Worth, Texas.

Oct 2010  High School Criminal Justice Instructor Training, College of Criminal Justice,
Sam Houston State University

Sept 2010  Curriculum Committee Member, College of Criminal Justice

April 2010  The Academy of Science – Conroe High School guest speaker

Jan 2010-2011  Board of Directors, Secretary, Society of Forensic Anthropology, national
organization.

August 2009,  American Academy of Forensic Sciences Forensic Sciences Education
2010  Conference, Sam Houston State University

-Bytheway-
Sept 2008-2009  Student Recruitment and Development Committee, Chair, Sam Houston State University
Sept 2008  Women’s Advisory Committee, Member, Sam Houston State University
Forensic Anthropology Laboratory Accreditation Committee, Member, Society of Forensic Anthropology
July 2008-present  Southeast Texas Applied Forensic Science Facility Operations Committee, Chair
June 2008  International Association for Identification, Texas Division, Keynote Speaker, Houston, Texas
2008  Scholarship Committee, Sam Houston State University
2008  “Crack the Case in CSI: The Experience”, Consultant, Houston Museum of Natural Science, Houston, Texas
2007 to present  Academic Advisor, Phi Sigma Pi, Sam Houston State University
2007 to 2010  Student Disciplinary Hearing Committee, Sam Houston State University
2006 to present  Forensic Science Committee, Sam Houston State University
2006 to present  Student Recruitment and Development Committee, Sam Houston State University
2007  Forensic Anthropology analysis of cases, Montgomery County Sheriff’s Office
2006 to present  Forensic Anthropology analysis of forensic cases, Galveston County Medical Examiner’s Office
2005  Peer Reviewer of 131 forensic cases
2005  Co-author, Standard Operating Procedures for Forensic Anthropology analysis of Mass Graves
2004  Reviewer, American Journal Physical Anthropology
2004  Judge, Student’s Scholarship and Creative Poster Presentations, California University of Pennsylvania
Jasmine M. Drake, Ph.D.
Assistant Professor, Forensic Science
College of Criminal Justice
Sam Houston State University

Degrees Earned

Ph.D. in Chemistry, Louisiana State University and A & M College, Baton Rouge, LA, 2007
BS in Chemistry, Honors, Southern University and A & M College, Baton Rouge, LA, 2002

Peer-Review Publications

Articles

Millican, Jasmine N.; Fronczek, Frank R.; Watkins, Steve F.; “4-Nitro-1-
[(trimethylsilyl)ethynyl]benzene: low-temperature polymorph at 100K” Acta Crystallographica
Section E 68, 2012.

Millican, J. N.; Phelan, D.; Thomas, E. L.; Leao, Juscelino; Carpenter, E. “Pressure-induced Effects
on the Structure of the FeSe Superconductor”, Solid State Communications 2009, 149 707-710.

Measurements of the Phonon Density of States of FeSe1-x Superconductors”, PHYSICAL REVIEW

Thomas, E. L.; Wong-Ng, W.; Phelan, D.; Millican, J.N. “Thermopower of Co-doped FeSe”
JOURNAL OF APPLIED PHYSICS 105, 2009 0739061-0739065.

Cho, J.Y.; Millican J. N.; Moldovan, M.; Young, D. P.; Sokolov, D.; Aronson, M.C.; Chan, J. Y.,
“Synthesis, structure, and physical properties of Ln3MGa12 (Ln = La, Ce; M = Ni, Cu)”, Chem.

Millican, J.N.; Macaluso, R.T.; Nakatsuji, S.; Machida, Yo; Maeno, Y; Chan, J.Y. “Crystal Growth

Thomas, E.L.; Okudzeto, E.; Millican, J.N.; Chan, J.Y. “Crystal Growth and the Search for Heavy

Nakatsuji, S.; Machida, Y.; Maeno, Y.; Tayama, T.; Sakakibara, T.; Duijn, J.v.; Balicas, L.; Millican,
J.N.; Macaluso, R.T.; Chan, J.Y. “Metallic spin-liquid behavior of the geometrically frustrated

Kim, M.S.; Bennett, M.; Sokolov, D.A.; Aronson, M.; Millican, J.N.; Chan, J.Y.; Huang, Q.; Chen, Y.;
B, 2006, 74, 224431.


**Artistic Performances**
N/A.

**Artistic Exhibitions**
N/A.

**Research Monographs and Technical Reports**
N/A

**Funded External Grants**
N/A

**Work or Professional Experiences**

Adjunct Faculty: (Introductory Chemistry) (8/2012 – Present)
Cedar Valley Community College - Lancaster, TX
Dallas Community College Campus

Teacher: Forensic Science and Chemistry (8/2012 – Present)
Nimitz High School  Irving, TX
Irving Independent School District

Drug Enforcement Administration (DEA) Dallas, TX
South Central Laboratory

NIST Center for Neutron Research - Gaithersburg, MD

Graduate Research/ Teaching Assistant (8/2002- 6/2007)
Louisiana State University And A&M College - Baton Rouge, LA

**Honors and awards**
Outstanding Research Award, Louisiana State University, April 2007
CBM² Colloquium Poster Competition -3rd Place, 2006
Other Competencies
N/A

PROFESSIONAL AFFILIATIONS/HONORS:
American Chemical Society Member
American Physical Society Member
American Crystallographic Association Member
NRC Postdoctoral Fellow at the NIST Center for Neutron Research (NCNR), August 2007

SERVICE
Forensic CSI Training Workshops for K-12 (approximately 10 in the DFW region), 2011-2012
Cast (Teaching for the Teachers) Forensic Training, DEA Laboratory, 2011
Goals for Girls Mentoring Program, Gaithersburg Middle School, 2008-2009
LSU Chemistry Department Demonstrations, LSU, 2002-2007
Appendix C

Curricula Vitae for Support Faculty
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Department/College</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Todd Armstrong</td>
<td>Associate Professor</td>
<td>College of Criminal Justice</td>
<td>PhD Criminology and Criminal Justice, University of Maryland</td>
</tr>
<tr>
<td>Dr. Danielle Boisvert</td>
<td>Assistant Professor</td>
<td>College of Criminal Justice</td>
<td>PhD Criminal Justice, Penn State Harrisburg</td>
</tr>
<tr>
<td>Dr. Brian Boutwell</td>
<td>Assistant Professor</td>
<td>College of Criminal Justice</td>
<td>PhD Criminology, Florida State University</td>
</tr>
<tr>
<td>Dr. Sibyl Bucheli</td>
<td>Assistant Professor</td>
<td>Department of Biological Science</td>
<td>PhD Entomology, Ohio State University</td>
</tr>
<tr>
<td>Dr. Madhusudan Choudhary</td>
<td>Assistant Professor</td>
<td>Department of Biological Science</td>
<td>PhD Genetics, McMaster University, Canada</td>
</tr>
<tr>
<td>Dr. Jerry Dowling</td>
<td>Professor</td>
<td>College of Criminal Justice</td>
<td>J.D., College of Law, The University of Tennessee</td>
</tr>
<tr>
<td>Dr. Donovan Haines</td>
<td>Assistant Professor</td>
<td>Department of Chemistry</td>
<td>PhD Chemistry, Wichita State University</td>
</tr>
<tr>
<td>Dr. William King</td>
<td>Associate Professor</td>
<td>College of Criminal Justice</td>
<td>PhD Criminal Justice, University of Cincinnati</td>
</tr>
<tr>
<td>Dr. Ilona Petrikovics</td>
<td>Associate Professor</td>
<td>Department of Chemistry</td>
<td>PhD Medicinal Biology, University Medical School, Debrecen, Hungary; PhD Organic Chemistry, University of Arts and Sciences, Debrecen, Hungary</td>
</tr>
<tr>
<td>Dr. Chris Randle</td>
<td>Assistant Professor</td>
<td>Department of Biological Science</td>
<td>PhD Evolution, Ecology and Organismal Biology, Ohio State University</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Department</td>
<td>University</td>
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<tr>
<td>Dr. Justin Williams</td>
<td>Associate Professor</td>
<td>Department of Biological Science</td>
<td>PhD Botany, University of Texas</td>
</tr>
<tr>
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<td></td>
<td>College of Sciences</td>
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</tr>
<tr>
<td>Dr. Darren Williams</td>
<td>Associate Professor</td>
<td>Department of Chemistry</td>
<td>PhD Chemistry, Oregon State University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>College of Sciences</td>
<td></td>
</tr>
<tr>
<td>Dr. Christopher Wilson</td>
<td>Professor and Chair</td>
<td>Department of Psychology</td>
<td>PhD Psychology, Texas Christian University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>College of Humanities and Social Sciences</td>
<td></td>
</tr>
</tbody>
</table>
Todd Armstrong
Associate Professor
College of Criminal Justice
Sam Houston State University

Degrees Earned

1999    Ph.D., Criminology and Criminal Justice, University of Maryland, College Park, MD
1996    M. A., Criminology and Criminal Justice, University of Maryland, College Park, MD
1992    B. A., Government and Politics, University of Maryland, College Park, MD

Professional Licensure and Certifications
N/A

Peer-Review Publications and Artistic Performances/Exhibitions

Articles


Armstrong, T. A., Katz, C., and Webb, V. (accepted for publication) Understanding the Impact of Sex Offender Registration on Offense Type and the Predictors of Recidivism Among Registered Sex Offenders, Justice Research and Policy.


**Books**

N/A

**Chapters**


**Proceedings**

NA

**Artistic Performances**

N/A
Research Monographs and Technical Reports


Funded External Grants

Co-Principal Investigator with G. Armstrong, A randomized evaluation of the Texas Department of Criminal Justice National Institute of Justice Prisoner Reentry Initiative, 2007. $100,000.


Principal Investigator, “Online Training Resources for Local Educational Agencies Applying for Title VI (Safe and Drug Free Schools and Communities Program) and State Chemical Abuse Funding.” Developed online training designed to help schools conduct a needs assessment, select proven prevention strategies and evaluate the implementation and outcomes of those strategies. Contract awarded by the Arizona Department of Education, 2005 $24,000.

Principal Investigator, "Violence Prevention Academy." Grant awarded by the Arizona Supreme Court, Juvenile Crime Reduction Fund, 2004. $13,000.

Principal Investigator, “Offering AJS 304 – Criminology on ‘the Net’: Expanding our Distance Learning Capacity.” Grant awarded by ASU West Instructional Development and Support Grant program, 2002. $4,287.

Principal Investigator, “Race, Social Ties and the Perceived Costs and Benefits of Offending: Are There Significant Differences across Groups?” Grant awarded by ASU West Scholarship, Research and Creative Activities Grant program, 2002. $5,000.

Principal Investigator with Chester L. Britt, "An Exploration of the Correlates of Specialization and Escalation." Grant awarded by the National Institute of Justice, Data Resources Program: Funding for the Analysis of Existing Data, 2001. $30,814.


Work or Professional Experiences

Associate Professor, Sam Houston State University. Fall 2007 – Present

Assistant Professor, Southern Illinois University Carbondale. Fall 2005 – Spring 2007
Assistant Professor, Arizona State University West. Fall 1999 – Spring 2005

Director, Violence Prevention Academy. Developed the School Based Violence Prevention Planning Program (SBV3P) and online resources (http://www.west.asu.edu/vpa). The SBV3P is a curriculum for school based violence prevention practitioners designed to assist school personnel in identifying and effectively implementing evidence based violence prevention strategies. The curriculum emphasizes organizational planning and best practices, while building the capacity of schools to prevention violence. The SBV3P was been pilot tested and the revised curriculum implemented in six schools from the Glendale Elementary School District. Fall 2002 – Spring 2005

Program Evaluation Consultant, Montgomery County Department of Corrections. Used a randomized research design to evaluate the Moral Reoration Therapy program (MRT). Evaluation efforts included data collection, data base development, and statistical analysis. June 1997 - June 1999

Honors and Awards

Academy of Experimental Criminology Young Experimental Scholar Award (Awarded at the American Society of Criminology meeting in Atlanta, GA, 2007)

Academy of Criminal Justice Sciences Anderson Paper Award for “Fear of Gangs: Implications for Victimization, Disorder, Community Concern and Subcultural Diversity Models.” (March 2003)

ASU West Partnership for Community Development Faculty Fellowship (fall 2001 - spring 2002)

Other Competencies
N/A
CURRICULUM VITAE
DANIELLE BOISVERT

PERSONAL

Office Address:       Home Address:
Sam Houston State University  118 Lake View Circle
College of Criminal Justice  Montgomery, TX 77356
Huntsville, TX 77341  (936) 242-0590 (home)
(936) 294-1644 (work)  (419) 973-1443 (cell)
d.boisvert@shsu.edu  danielle_boisvert@hotmail.com

CURRENT POSITION

2012-present  Assistant Professor, College of Criminal Justice, Sam Houston State University.

2009-2012  Assistant Professor, Department of Criminal Justice, School of Public Affairs, Penn State Harrisburg.

EDUCATION

2009  Ph.D., Division of Criminal Justice, University of Cincinnati, Cincinnati, Ohio, USA.


   Chair: Dr. John Paul Wright


2001  Honors Bachelor of Sciences in Biology, University of Western Ontario, London, Ontario, Canada.
ARTICLES/CHAPTERS


**Encyclopedia Entries**


**PAPERS UNDER REVIEW**


**RESEARCH IN PROGRESS**


Boisvert, D., Newsome, J., & Wright, J. P. The initiation, progression, and desistance of criminal behaviors from adolescence to adulthood: A genetic analysis.


Nelson, M., Gabbidon, S., & Boisvert, D. Philadelphia area residents’ views on the disproportionate representation of Blacks and Hispanics in the criminal justice system.

Newsome, J., Boisvert, D., & Wright, J. P. Genetic and environmental influences on the co-occurrence of cognitive ability and externalizing behavior in childhood.

Newsome, J., Boisvert, D., & Wright, J. P. Self-control and the initiation and progression of externalizing behaviors: A genetic analysis.


Vaske, J., Makarios, M., Boisvert, D., Beaver, K. M., & Wright, J. P. Gender & bio-psycho-sociology: Integrating genetic and psychological factors into the feminist pathway model.

**Funded Research**


**Invited Presentations**

University of Texas, San Antonio, Alpha Phi Sigma Guest Lecture Series (February 18, 2011). Presented research titled Genetic and Environmental Overlap between Low Self-Control and Delinquency.

Penn State Harrisburg Advisory Board Meeting (June 3, 2010). Co-presented research with Dr. Barbara Sims, Dr. Jennifer Sumner, and Dr. Chiara Sabina titled Relevance of Research in Solving Societal Problems.


Dauphin County Criminal Justice Advisory Board (December 17, 2009). Co-presented research with Dr. Jennifer Sumner titled High Risk Families: A Cost/Benefit Analysis of County Incarceration and Treatment.

**Conference Presentations**


Vaske, J., Makarios, M., Boisvert, D., Beaver, K. M., & Wright, J. P. (2007). *A re-test of the feminist pathway hypothesis to include genetic effects*. Paper presented at the annual meeting of The American Society of Criminology, Atlanta, GA.


**Teaching Experience**

*Undergraduate Courses (residential)*
- Statistics
- Juvenile Justice Systems
- Life Course Criminology
- Research Methods

*Undergraduate Courses (online)*
- Statistics
- Research Methods
- Introduction to Corrections
- Introduction to Criminology
Graduate Courses
Advanced Criminological Theory
Quantitative Research Methods
Life Course Criminology
Behavioral Genetic Modeling (co-taught)

Graduate Distance Learning Courses (facilitator), University of Cincinnati.
Administrative of Justice
Applied Research Methods
Applied Statistics
Basic Research Methods
Community Corrections Correctional Rehabilitation
Crime and the Life Course
Criminal Justice Management
Criminal Justice Policy Analysis
Juvenile Justice Systems
Law and Social Control
Police Effectiveness
Theory and Philosophy of Corrections
Theory and Philosophy of Law Enforcement
White Collar Crime

Work Experience

2004 Program Coordinator, Biotechnology Program at the Richard Ivey School of Business, University of Western Ontario; curriculum development, marketing of program, and student placement.

2001 Intern, Bode Technology Group; World Trade Center DNA Identification Project.

Scholarships and Awards

2007 - 2009 Research Assistant, University of Cincinnati, Division of Criminal Justice.

2006 - 2007 Teaching Assistant, University of Cincinnati, Division of Criminal Justice.

2004 - 2009 University Graduate Scholarship, University of Cincinnati, Division of Criminal Justice.

2004 - 2009 Graduate Assistantship, University of Cincinnati, Division of Criminal Justice.

2001 Special recognition award from Bode Technology for the World Trade Center DNA Identification Project.

1997 University Scholarship, University of Western Ontario.
1997 Dana Corporation Scholarship.
1997 University Women Scholarship.

**CERTIFICATES**

2012 The 25th International Workshop on Methodology of Twin and Family Studies, The Institute of Behavioral Genetics, University of Colorado at Boulder

2010 The 23rd International Workshop on Methodology of Twin and Family Studies, The Institute of Behavioral Genetics, University of Colorado at Boulder

2010 CITI Course in the Protection of Human Research Subjects

2009 Health Insurance Portability and Accountability Act (HIPAA): The Impact on Research Training, Penn State Harrisburg

2009 Institutional Review Board (IRB) Basic Training on the Protection of Human Participants, Penn State Harrisburg

2009 NIH Basic Training on the Protection of Human Participants

2008 Stata Training Course, University of Cincinnati

2008 The 21st International Workshop on Methodology of Twin and Family Studies, The Institute of Behavioral Genetics, University of Colorado at Boulder

2004 SPSS Syntax Course, University of Cincinnati

**PROFESSIONAL AFFILIATIONS**

Behavioral Genetics Association
Academy of Criminal Justice Sciences
American Society of Criminology

**PROFESSIONAL ACTIVITIES**


Session Chair. (2011). *Genetic effects on crime, delinquency, and conduct disorder*. The
American Society of Criminology, Annual Meeting, Washington, DC.


**UNIVERSITY SERVICE**

2012-present  Member, Criminal Justice Faculty search committee, Sam Houston State University

2012-present  Member, Awards and Beto Chair Committee, Sam Houston State University

2011-2012    Member, Faculty Affairs Committee, Penn State Harrisburg

2011-2012    Member, Diversity and Educational Equity Committee, Penn State Harrisburg

2011-2012    Member, Criminal Justice Faculty search committee, Penn State Harrisburg

2011-2012    Member, Honors Advisory Council, Penn State Harrisburg

2011    Member, Administrative Support Assistant search committee, Penn State Harrisburg

2010-2012    Member, MACJ Admissions Committee, Penn State Harrisburg

2010-2012    Member, MACJ Student Funding Committee, Penn State Harrisburg

2009-2012    Member, School of Public Affairs Web Management Committee, Penn State Harrisburg

2009-2011    Member, Student Affairs Committee, Penn State Harrisburg
REVIEWER

Criminal Justice and Behavior
Criminology
International Journal of Comparative and Applied Criminal Justice
Journal of Adolescence
Journal of Criminal Justice
Journal of Health and Human Services Administration
Journal of Research in Crime and Delinquency
Justice Quarterly
Wiley-Blackwell Publishing

REFERENCES

Dr. John P. Wright
School of Criminal Justice
University of Cincinnati
PO Box 210389
Cincinnati, OH 45221-0389
Office: (513) 556-5829
E-mail: john.wright@uc.edu

Dr. Barb Sims
School of Public Affairs
Penn State Harrisburg
777 W. Harrisburg Pike
Middletown, PA 17057
Office: (717) 948-6044
Email: bas4@psu.edu

Dr. Francis T. Cullen
School of Criminal Justice
University of Cincinnati
PO Box 210389
Cincinnati, OH 45221-0389
Office: (513) 556-5834
E-mail: francis.cullen@uc.edu
Brian B. Boutwell, Ph.D.
Assistant Professor
College of Criminal Justice
Sam Houston State University

**Degrees Earned**
Ph.D., Criminology, 2010
Florida State University
M.S., Criminology, 2007
Florida State University
B.S., Criminology and Psychology, 2006
Florida State University

**Professional Licensure and Certifications**
N/A

**Peer-Review Publications and Artistic Performances/Exhibitions**

**Articles**

Boutwell, Brian B. and Kevin M. Beaver

Boutwell, Brian B. and Kevin M. Beaver

Boutwell, Brian B. and Kevin M. Beaver

Beaver, Kevin M., Brian B. Boutwell, J.C. Barnes, and Jonathon A. Cooper
2009 “The Biosocial Underpinnings to Adolescent Victimization: Results from a Longitudinal Sample of Twins.” Youth Violence and Juvenile Justice 7 (July):223-238.

Beaver, Kevin M., J. Eagle Shutt, Brian B. Boutwell, Marie Ratchford, Kathleen Roberts, and J.C. Barnes
2009  “Genetic and Environmental Influences on Levels of Self-Control and Delinquent Peer Affiliation.” Criminal Justice and Behavior 36 (January):41-60.

Vaske, Jamie, Jamie Newsome, Matthew Makarios, John Paul Wright, Brian B. Boutwell, and Kevin M. Beaver

Beaver, Kevin M., Matt DeLisi, Michael G. Vaughn, John Paul Wright, and Brian B. Boutwell

Boutwell, Brian B. and Kevin M. Beaver

Books
N/A

Chapters
Beaver, Kevin M., J.C. Barnes, Brian B. Boutwell, and Jonathon A. Cooper

Proceedings
N/A

Artistic Performances
N/A

Artistic Exhibitions
N/A

Research Monographs and Technical Reports
N/A

Funded External Grants
N/A

Peer-Review Presentations/Posters
Boutwell, Brian B. and Kevin M. Beaver

Beaver, Kevin M., Matt DeLisi, Michael Vaughn, John Paul Wright, and Brian Boutwell 2008  “The Relationship between Self-Control and Language: Evidence of a Shared Etiological Pathway.” Paper presented at the annual meeting of the American Society of Criminology in St. Louis, MO.


Boutwell, Brian and Kevin M. Beaver 2007  “A Biosocial Explanation to Delinquency Abstention.” Paper presented at the annual meeting of the American Society of Criminology in Atlanta, GA.

Work or Professional Experiences
N/A

Honors and Awards
Recipient of the Dissertation Research Grant, awarded each fall and spring semester by The Florida State University, 2009.

Other Competencies
N/A
SIBYL RAE BUCHELI
ASSISTANT PROFESSOR

Sam Houston State University
1900 Ave I Lee Drain Building #300
Huntsville, TX 77340
936.294.1550; bucheli@shsu.edu

Major Research Interests

- Molecular and Morphological Evolution of Lepidoptera, Coleoptera, and Diptera.
- Use of Ecological and Behavioral Data in Phylogenetic Studies.
- Evolution of Insect Genitalia and their Utility as Phylogenetic Characters.
- Insect Succession on Carrion in Southwestern, Subtropical Texas.

Academic Employment

2008-Present  Assistant Professor, Sam Houston State University (Graduate Advisor since Fall 2010).
2007-2008    Visiting Assistant Professor, Sam Houston State University.

Education

2005    The Ohio State University, Department of Entomology, Doctor of Philosophy, Advisor: John W. Wenzel.
1999    The Ohio State University, Department of Entomology, Master of Science, Advisor: John W. Wenzel.
1996    Hiram College, Department of Biology, Bachelor of Arts.
Publications


Grants


2010 PI. Enhancement Research Grant, Investigation of Calliphoridae across the 10 ecoregions of Texas; $12,558.

2009 PI. Faculty Research Grant, Systematics and Diversity of Gelechioidea (Lepidoptera); $5,000.

2008 CoPI. Beckman-Coulter Inc. Genomics Educational Grant, Prepared jointly with Dr. Christopher Randle, Dr. Raelynn Deaton, Dr. Anne Gaillard, and Dr. Todd Primm; $100,000.


2004 Awardee. Alumni Grants for Graduate Research and Scholarship, The Ohio State University.

2001 Awardee. DeWind Award for Lepidoptera Research and Conservation, Xerces Society; $2,000.

2000 Awardee. Theodore Roosevelt Memorial Fund, American Museum of Natural History; $2,000.

Presentations

Invited Presentations and Workshops:


2009, 2010, 2011 Forensic Science Educational Conference, Sam Houston State University in conjunction with The American Academy of Forensic Science and STAFS.


2006 University of California, Riverside, California.

2006 Sam Houston State University, Huntsville, Texas.

2006 Entomological Society of America, Indianapolis, Indiana.
2005  Entomological Society of America, Ft. Lauderdale, Florida.

Submitted Oral Presentations:

2011  Sam Houston State University Biological Sciences Research Symposium, Huntsville Texas, Spring Semester
2011  Annual North American Forensic Entomology Meeting, College Station, Texas, 20-23 July (2 titles).
2008  National Entomological Society of America Annual Meeting, Reno, NV.
2008  The Lepidopterists Society Annual Meeting, Starkville, Mississippi.
2006  The Lepidopterists Society Annual Meeting, Gainesville, Florida.
2006  The Willi Hennig International Meetings, XXIV, Oaxaca, Mexico.
2005  Presented in partial fulfillment of the Doctor of Philosophy at The Ohio State University
2005  Symposium presentation, National Entomological Society of America Annual Meeting, Fort Lauderdale, Florida.
2004  Harry Clench Award, The Lepidopterists’ Society Annual Meeting, College Park, Maryland.
2004  National Entomological Society of America Annual Meeting, Salt Lake City, Utah.
2000  National Entomological Society of America Annual Meeting, Montreal, Quebec.
1999  Presented in partial fulfillment of the Degree of Masters of Science at The Ohio State University.

Submitted Poster Presentations:

2011  Texas Academy of Sciences Annual Meeting, St. Edward's University in Austin, Texas, 3 - 5 March.
2011  Sam Houston State University Biological Sciences Research Symposium, Huntsville Texas, Spring Semester (2 titles).
2011  Annual North American Forensic Entomology Meeting, College Station, Texas, 20-23 July (5 titles).
2010  Microbial Genomics and Metagenomics Workshop. Walnut Creek, CA. October.
2008 The Lepidopterists Society Annual Meeting, Starkville, Mississippi.
2005 The Lepidopterists Society Annual Meeting, Sierra Vista, Arizona.
2004 The Lepidopterists Society Annual Meeting, College Park, Maryland.
2002 The Willi Hennig International Meetings, XXI, Helsinki, Finland.
1999 President’s Prize Award Winner, National Entomological Society of America Annual Meeting, Atlanta Georgia.
1996 The Ohio Academy of Sciences, Undergraduate Thesis.

Awards

2011 Sam Houston State University Mentoring Award
2004 Dean's Award for Excellence as Graduate Teaching Assistant.
2004 Edward J. Ray Travel Award for Scholarship and Service.
2004 Graduate Teaching Associate Graduate Assistant Teaching Award.
2004 Harry Clench Award for Best Student Talk. Lepidopterists Society of America, College Park, Maryland.
2003 DeLong Research Award, Ohio State University, Department of Entomology.
2002 Fred W. Hink Research Award, Ohio State University, Department of Entomology.
2002 Professional Development Fund, Ohio State University, Graduate Committee.
2002 Clive Edwards Travel Fund, Ohio State University, Department of Entomology.
2002, 2004 Knnull Fund, Ohio State University, Department of Entomology, Insect Collection.
1999 Introductory Biology Program Student Teaching Award.
1999 President’s Prize for Best Student Poster, First Place; Entomological Society of America, Atlanta, Georgia.

Symposia Organized

2005 “The Phallic Cult”, Program Symposium and Section Symposium, National Entomological Society of America, with Hojun Song.
Teaching Experience

Lecturer 2007 – Present. Sam Houston State University. Contemporary Biology BIO134; Economic Entomology BIO364; Forensic Entomology BIO530, General Entomology BIO431; Invertebrate Zoology BIO471; Introduction to Evolutionary Biology BIO461; Insect Evolution BIO571; Scientific Illustration BIO595.

Graduate Teaching Assistant 1999 – 2004. The Ohio State University. General Biology for Nonmajors BIO101; Nonmajors Plant Biology BIO101; Nonmajors Entomology ENT101; Human Biology BIO102, Head Graduate Teaching Associate; General Biology for Majors BIO114, Head Graduate Teaching Associate; Evolution BIO440; Entomology for Science Teachers ENT520; Advanced Economic Entomology ENT620; Insect Systematics ENT621; Insect Morphology ENT632; Insect Ecology ENT641; Medical Entomology ENT680.


Student Advising

Graduate Research

Natalie Lindgren, Major Advisor, Sam Houston State University.

Alan Archambeault, Major Advisor, Sam Houston State University.

Brent Rahlwes, Major Advisor, Sam Houston State University.

Michelle Lewis, Advisor, Sam Houston State University.

Melissa Sisson, Advisor, Sam Houston State University.

Robert De Moya, Advisor, Sam Houston State University.

Juan Garcia, Major Advisor, Sam Houston State University.

Janalynn West, Graduate Committee Member, Sam Houston State University.

Jovanne Cole, Graduate Committee Member, Sam Houston State University.

Stacy Stoops, Graduate Committee Member, Sam Houston State University.
Ashley Morgan, Committee Member, Sam Houston State University.

Katey Estill, Committee Member, Sam Houston State University.

Mallory Mardock, Committee Member, Sam Houston State University.

Amber Bartelt, Committee Member, Sam Houston State University.

Jassica Sanchez, Committee Member, Sam Houston State University.

Undergraduate Research

Chelsea Hernandez, BIO495 (Spring 2012) Ability of phorid flies to access tight-sealing containers.

James Willet, BIO495 (Fall 2011 – Spring 2012) Identification of a phorid fly on human remains.

Araceli Rosillo, McNair Scholar, BIO495 (Spring 2012) Biodiversity of Carrion Beetles in Southeast Texas.

Beth Ferguson, Honors Scholar, BIO495 (Spring 2012) Effects of Neen Oil on White Flies

Melissa Sisson, BIO495 (Fall 2009), Sam Houston State University.

Eric Mikolajchak, BIO495 (Summer 2009), Sam Houston State University.

Orry Martin, BIO495 (Spring 2009), Sam Houston State University. An investigation of the free-living lifestyle of Planaria with special attention paid to personal observations.

Alan Archambeault, BIO495 (Fall 2008), Sam Houston State University. Molecular characterization of filth flies in Texas.

Savannah Witt, BIO495 (Fall 2008), Sam Houston State University. A survey of current techniques used in insects collection.

Natalie Lindgren, Independent Research (2008), Sam Houston State University. “The Thicket of Life” All Taxon Bioinventory (ATBI).

Alan Archambeault, Independent Research (2008), Sam Houston State University. “The Thicket of Life” All Taxon Bioinventory (ATBI).

Juan Garcia, McNair Scholar (2008), Sam Houston State University. Molecular and morphological evolution of Gelechioidea (Lepidoptera).

Olinda Cardenas, BIO495 (Fall 2007), Sam Houston State University. Postmortem Interval determination of a carcass using insect developmental rate models and insect successional models.
Phillip Torres, Research Experience for Undergraduates (Summer 2007), Sam Houston State University. Diversity of Lepidoptera at the Center for Biological Field Studies, Sam Houston State University.

Professional Society Memberships, past and current.

Entomological Society of America, current.
North American Association of Forensic Entomologists.
Lepidopterists’ Society of America.
Willi Hennig Society.
Society for the Study of Evolution.

Committees Served

2009 Forensic Science Educational Conference Steering Committee, Sam Houston State University in conjunction with The American Academy of Forensic Science.
2009 – Present HAVEN a GLTBQ safe zone program, Sam Houston State University Student-run Committee.
2009 – Present Master of Science Forensic Science Committee, Sam Houston State University.
2008 – 2010 Curriculum Committee, Sam Houston State University.
2008 – 2010 Field Station Committee, Sam Houston State University.
2007 – Present Graduate Committee, Sam Houston State University, CHAIR.
2007 – Present Student Research Award Committee, Sam Houston State University.
2004 – Present Awards Committee, The Lepidopterist’s Society of America.
2002 – 2005 Graduate Studies Committee Graduate Student Representative, Voting Member.
1998 – 2000 Entomology Graduate Student Association: Secretary, President.

Manuscript Reviewing

The Washington Entomological Society; The Journal of the Lepidopterists’ Society; Annals of the Entomological Society of America; Invertebrate Systematics; Biological Journal of the Linnaean Society; Cladistics.
Grant Reviewing

Encyclopedia of Life and Panel Reviewer.
Encyclopedia of Life and External Reviewer.
National Science Foundation External Reviewer.
National Science Foundation Panel Reviewer.
Texas Academy of Science Student Research Award.
Women in Science Student Research Award.

Curation

Sam Houston State University, Huntsville, Texas.
The Canadian National Collection, Ottawa, Canada.
The Ohio State University, Columbus, Ohio.

Major Collections Studied

The Canadian National Collection, Ottawa, Canada.
The National Museum of Natural History, Smithsonian Institute, Washington, DC.
The Smithsonian Tropical Research Institution, Panama City, Panama.
The Missouri Botanical Gardens, St. Louis, Missouri.
The University of Arizona Herbarium and Insect Collection.
Kirshtenbosch Botanical Gardens, Cape Town, South Africa.
The Finnish Museum of Natural History, Helsinki, Finland.

Field Experience

Texas and surrounding states (permit holder).
Ohio and surrounding states.
Ontario, Canada.
Sonoran Desert, Arizona (permit holder).
Chihuahuan Desert, Arizona and New Mexico (permit holder).
Chiricuan Mountains, Arizona (permit holder).
Western Cape, South Africa (permit holder).
All Taxon Bio-Inventory of the Great Smoky Mountain National; Park, Lepidoptera branch, Twig Leader (permit holder).
All Taxon Bio-Inventory of local Columbus Parks, Columbus, OH.
All Taxon Bio-Inventory of Hocking Hills area, Hocking County, OH.
Arthropods of Le Salva All Taxon Bio-Inventory, Costa Rica (permit holder).
Big Bend National Park, Texas (permit holder).
“Thicket of Life” All Taxon Bio-Inventory of The Big Thicket National Preserve, TX (PI).
Internet Resources


Featured in Popular Media


Artistic Exhibitions

Entomology Display Cases for use by The C. A. Triplehorn Insect Collection, Ohio State University Department of Entomology.

Community Service

Exterminator Consultant, Huntsville, TX
Saturdays at Sam, Huntsville, TX
Science Saturday at Sam Huntsville, TX
Naturalist for Boy Scouts and Girl Scouts of America, Columbus, OH.
Insect Outreach Program with local grade schools, Columbus, OH.
Docent, Columbus Zoo, Annual Insect Fair, Columbus, OH.
Founding member of Graduate Women in Science, The Ohio State University, Columbus, OH.
Science Fair Judge Duties included judging science projects for area school, Columbus, OH.
BIographiesHc h A Sketch
Madhusudan Choudhary
Department of Biological Sciences
Sam Houston State University
Huntsville, TX 77341-2116
Phone 936-294-4850, Email: mchoudhary@shsu.edu

A. Education:
Postdoctoral 1988-1990 Duke University, USA Genetics & Molecular Evolution
Ph.D. 1988 McMaster University, Canada Genetics and Molecular Evolution
M. Sc. 1977 Patna University, India 1st Class, Botany
B. Sc. (Hons) 1974 Patna University, India 1st Class (Biology)

B. Employment:
2008 to current Assistant Professor Sam Houston State University, USA
1993 to 2008 Research Assistant Professor U.T. Medical School at Houston, USA
1990 - 1992 Huxley Fellow Rice University, USA

C. Award and Scholarship:
2012 University Mentoring Award Sam Houston State University
2012 ASM Biology Scholar American Society of Microbiology
2012 Prof. R. P. Roy Memorial lecture Patna University, India

D. Five most relevant publications (*undergraduate coauthor)

E. Additional publications:


F. SYNERGISTIC ACTIVITIES

1. Research Funding Support
   - Genome analysis of *Rhodobacter sphaeroides* genome (2009-2010) Sam Houston State University Competitive Intramural Enhancement Grant for Research (EGR)
   - Role of CtrA during cell cycle of *Rhodobacter sphaeroides* (2010-2011) Sam Houston State University Competitive Intramural Enhancement Research Grant (ERG)
   - ASPIRE: Biomedical research experience for undergraduates: Inter-disciplinary course curriculum. M. Choudhary (PI), and H. Cho (co-PI), KECK Foundation April 2011 (Not funded).

2. Professional Activities
   - Reviewer: Biochemical Genetics, African Journal of Biotechnology, Evolution
   - Membership: ASM, AAAS, and Sigma Xi
   - Secretary, Texas ASM Branch
   - Committees: University Research Council (2011-2014), Faculty Evaluation Committee (2011, 2012), Molecular Biologist Hiring Committee (2011), Seminar Committee (Chair, 2010-2011)

F. COLLABORATORS

1. Sam Houston State University: Hyuk Cho (Computer Science), Todd Primm, Diane Neudorf, and Aaron Lynne (Biological Sciences)
2. University of Texas Health Science Center-Houston: Dr. Samuel Kaplan (Department of Microbiology and Molecular Genetics)
3. Western Kentucky University: Nilesh Sharma and Kinchel Doerner (Department of Biology)

G. STUDENTS

**Graduate students:** Lin Lin (MS-2010, Attending Ph.D. program at Max Planck Institute, Germany); Anne Peters (MS-2011, Attending Ph.D. program at Texas A&M University); Cheramie Trahan (MS-2012); Bat-Erdene Myagmarjav (Current)

**Undergraduates:** Anish Bavishi (attending Medical School at Baylor College of Medicine), Kristen Schroeder (attending Pharmacy school at Texas A&M University), Norma Ogbonna (attending Medical school at American University at Antigua), Jonathan Stone (attending Medical School at UT Health Science Center at Houston), Leah Severin (attending Physical Therapy Program at Texas Women’s University, Houston, Texas), Phillip Price (attending Ph.D. Program at Emory University), Bat-Erdene Myagmarjav (Graduate School-Sam Houston State University)
Jerry L. Dowling
Professor
College of Criminal Justice
Sam Houston State University

**Degrees Earned**
J.D., College of Law, The University of Tennessee, 1968.

**Professional Licensure and Certifications**
Admitted to the practice of law, State of Tennessee, 1969 - present (inactive status).

**Peer-Review Publications and Artistic Performances/Exhibitions**

**Articles**


**Books**


**Chapters**

**Peer-Review Presentations/Posters**

“An Examination of Follow-up Investigative Effort Expended on Selected Criminal Offenses in a Mid-size American City,” paper presented to the 46th Annual Meeting of the Academy of Criminal Justice Sciences, Boston, Massachusetts, March 2009.


**Work or Professional Experiences**

1981 – Present, Professor of Criminal Justice, Sam Houston State University

1974 - 1981 – Associate Professor of Criminal Justice, Sam Houston State University

1972 – 1974 - Assistant Professor of Criminal Justice, Sam Houston State University

1980 – 1984 - Assistant Director for Professional Programs, Criminal Justice Center, Sam Houston State University

1969 – 1972 – Special Agent, Federal Bureau of Investigation

**Honors and Awards**

Excellence in Teaching Award, Sam Houston State University, 2001.

**Other Competencies**


Co-developer with L.T. Hoover, *Allocation Model for Police Patrol*, 2005 - present. Computer software template based on Microsoft Excel. Template allows municipal law enforcement agencies to determine the number of patrol officers necessary to deliver varying levels of police services.
Donovan C. Haines  
Assistant Professor of Chemistry  
Department of Chemistry  
College of Arts and Sciences  
Haines@SHSU.edu; PH: 936-294-1530

Degrees Earned
- Ph.D., in Chemistry (Biological Track), Wichita State University, 1998
- B.S. in Biochemistry, Wichita State University, 1993

Work or Professional Experiences

**Assistant Professor of Chemistry:**  
2008 - current
Department of Chemistry, Sam Houston State University, Huntsville, TX  
Manage/Direct Research Laboratory: Enzyme cloning, expression, and engineering; Toxicology; Synthetic Biology  
Undergraduate Courses: Intro. To Organic and Biochemistry (incl. labs), Biochemistry, Organic Chemistry (incl. labs), Metabolism  
Graduate Courses: Advanced Biochemistry I

**Assistant Professor of Chemistry:**  
2001 - 2008  
Department of Chemistry, The University of Texas at Dallas, Richardson, TX  
Managed/Directed Research Laboratory: Enzyme cloning, expression, engineering, and spectroscopic and kinetic characterization, organic synthesis, natural product extraction and characterization, quorum sensing bioassay  
Undergraduate Courses: Biochemistry, Organic Chemistry (incl. labs), Analytical Chemistry (incl. labs)  
Graduate Courses: Physical Biochemistry, Chemistry Literature and Communications  
Guest Lectures in: Physical Chemistry, Bionanotechnology

**Postdoctoral Researcher:**  
1999 - 2001  
Julian A. Peterson Laboratory, Department of Biochemistry, University of Texas Southwestern Medical Center at Dallas, Dallas, TX  
Techniques: Site directed mutagenesis, stopped-flow kinetics, fluorescence spectroscopy, protein crystallography, enzyme cloning and expression, GC/MS, organic synthesis of acyl amino acid substrates, enzymatic eicosanoid synthesis on the 100 mg scale

**Graduate Teaching Assistant:**  
1994 - 1998  
Department of Chemistry, Wichita State University, Wichita, KS  
Courses: General Chemistry, Biochemistry, Instrumental Methods, Computer Lab

**Graduate Research Assistant:**  
1994 - 1998  
Kandatege Wimalasena Laboratory, Department of Chemistry, Wichita State University, Wichita, KS  
Tasks: Organic synthesis of thione containing enzyme inhibitors, enzyme kinetics, enzyme purification, spectroscopy of enzymes (UV-vis, EPR), mass spec, FPLC (size-exclusion, ion exchange, chromatofocusing) HPLC
Peer-Review Publications and Artistic Performances/Exhibitions

Articles (22 total peer-reviewed articles + 1 in review)


A Role for the Strained Phenylalanine Ring Rotation Induced by Substrate Binding to Cytochrome CYP102A1, Haines, D.C., Protein and Peptide Letters, 10, 977-80 (2006)


**Funded External Grants**

- Engineering an Efficient Cholesterol Hydroxylase from a Highly Active Fatty Acid Hydroxylase, CYP102A1, Haines, D.C. (PI), Welch Foundation, Houston, TX, 2005-8, $150,000 (University of Texas at Dallas)

- Potential Regulation of Production of Metastasis-Inducing Oxysterol by Interaction of CYP46 with Profilin and GAS7, Haines, D.C (PI), American Cancer Society Institutional Research Grant to University of North Texas Health Sciences Center, 2004, $15,000 (University of Texas at Dallas)

**Honors and Awards**

- B.L. Parker Endowed Fellowship, 1995 – 1998
- Wichita State Univ. Outstanding Senior Chemist (ACS), 1994
- National Merit Semifinalist, 1989
- State of Kansas Scholar, 1989
Peer-Review Presentations/Posters

Man vs Machine: Balancing Tech in the Classroom with a Human Element. Texas Branch of the American Society for Microbiology Meeting, Waco, TX, October 2012.


A Single Residue with Dramatic Impact on Substrate-Induced Spin-State Change in P450BM-3, Texas Enzyme Mechanism Meeting, Univ. of Texas School of Pharmacy, Austin, TX, January, 2012.

Correlation of LD50 and cytochrome c oxidase activity in mitochondria from brains of rodents treated with cyanide and cyanide poisoning antidotes, 50th Annual Society of Toxicology Meeting in Washington, DC, March 2011.

Cytochrome P450 Mediated Metabolism of Bacterial Acyl Homoserine Lactones with Implications for Cystic Fibrosis, Joint 66th Southwest and Southeast Regional Meeting of the American Chemical Society, New Orleans, LA, December 2010.

Interactions Between Bacterial AHL Quorum Signals and Human Immunomodulatory P450 Cytochromes” Fall 2010 Meeting of the Texas Society for Microbiology, San Marcos, TX, October 2010.

Brain mitochondrial cytochrome c oxidase activity as a marker for cyanide intoxication and prophylaxis, 49th Annual Society of Toxicology Meeting, Salt Lake City, UT, March 2010.

Acyl Homoserine Lactone Inactivation by Mammalian P450 Enzymes, Southwest P450 Meeting, Houston, TX, May 2008.

Cytochrome P450: Drugs, Bugs, and Brains, Sam Houston State University, Huntsville, TX, November 2007.

Faster Than a Speeding Bullet: New Insights into CYP102s, American Chemical Society Midwest Regional Meeting, Kansas City, KS, November 2007.

Faster Than a Speeding Bullet: New Insights into CYP102s, Southwest P450 Meeting, Houston, TX, May 2007.

Cytochrome P450 Oxidation of Acyl Homoserine Lactones in Bacterial Quorum Sensing: Torching Enemy Communication?, Southern Methodist University, Department of Chemistry, Dallas, TX, March 2006.

Cytochrome P450: The Master Chemist, Wichita State University, Department of Chemistry, Wichita, KS, March 2005.

P450BM-3 (CYP102A1): A Probable Quorum Quencher, (This award winning invited talk was presented by graduate student Puneet Chowdhary), Southwest P450 Meeting, Houston, TX, May 2004.

Cytochrome P450: The Master Chemist, University of Texas at Commerce, Department of Chemistry, Commerce, TX, February 2004.

From Thin Air: Biomachinery That Uses Oxygen For Defense, Emotion, And Thought University of Texas at Dallas, Institute for Biomedical Sciences and Technology, Richardson, TX, January 2004.

Computational Analysis Of Substrate-Induced Alteration Of Heme-Phenylalanine Interactions In Class III P450s, Southwest Macromolecular Symposium, Houston, TX, October 2003.

Computational Analysis of Substrate-Induced Alteration of Heme-Phenylalanine Interactions in Class III P450s, Southwest P450 Meeting, Houston, TX, May 2003.

Enzymatic Monoxygenation: From Chemistry To Structural Biology, Texas Christian University, Department of Chemistry, Fort Worth, TX, October 2001.
Other Competencies

2010 – 2012 Advisory Board Member for SHSU Texas Research Institute for Environmental Studies
2010 – 2012 Advisory Board Member for SHSU Forensic Science Department
2002 – 2012 Reviewer (Grant Proposal), Alzheimer Association
2007 – 2012 Reviewer (Manuscript), Biochemistry
2011 – 2011 Reviewer (Manuscript), Dalton Transactions
2011 – 2011 Reviewer (Manuscript), Protein & Cell
2010 – 2011 Reviewer (Manuscript), Journal of Phycology
2010 – 2010 Reviewer (Manuscript), Chemical Reviews
2010 – 2010 Reviewer (Manuscript), Applied Microbiology and Biotechnology
2006 – 2009 Reviewer (Grant Proposal), National Science Foundation
2005 – 2008 Coordinator, Univ. of Texas at Dallas Department of Chemistry Doctoral Qualifying Examination
2005 – 2008 Assistant Recruiter, Univ. of Texas at Dallas Department of Chemistry Graduate Program
2005 – 2008 Member, Univ. of Texas at Dallas Biosafety Committee
2005 – 2008 Reviewer (Manuscript), Journal of the American Chemical Society
2002 – 2008 Interviewer, Univ. of Texas at Dallas Health Professions Advisory Committee
2006 – 2007 Organizer, Affiliation Between Dept. of Chemistry and Eurasian National University, Astana, Kazakhstan
2006 – 2007 Reviewer (Grant Proposal), U.S. Civilian Research and Development Foundation (CRDF)
2002 – 2007 Member, Univ. of Texas at Dallas Chemistry Department Web Page Committee
2005 Assistant Organizer, 14th International Conference on Cytochromes P450 (Dallas, TX)
2001 – 2005 Chair, Univ. of Texas at Dallas Chemistry Departmental Seminar
2002 – 2003 Demonstrator, Alpha Phi Omega Boy Scout Camp
2001 – 2002 Demonstrator, Alpha Phi Omega Science Fair
William R. King  
Associate Professor of Criminal Justice  
College of Criminal Justice

**Degrees Earned**  
Ph.D. in Criminal Justice, University of Cincinnati, 1998  
M.S. in Criminal Justice, University of Cincinnati, 1993  
B.S. in Criminal Justice, University of Massachusetts at Lowell, 1992

**Professional Licensure and Certifications**  
N/A

**Peer-Review Publications and Artistic Performances/Exhibitions**

**Articles**  
2010 “Assessing the Performance of Systems Designed to Process Criminal Forensic Evidence.”  


Books


Chapters


Proceedings
N/A

Artistic Performances
N/A

Artistic Exhibitions
N/A

Research Monographs and Technical Reports


2008 King, William R. The Investigation of Homicides by the Trinidad and Tobago Police Service Homicide Bureau of Investigation. Report produced for “Reducing Crime in Trinidad and Tobago: A Strategic Approach, Years Two and Three.”

2008 King, William R., and Jeff Snipes. Productivity of the Firearms Section at the Forensic Science Centre (FSC) of Trinidad and Tobago, 2000-2007. Report produced for “Reducing Crime in Trinidad and Tobago: A Strategic Approach, Years Two and Three.”


Funded External Grants


Appalachian Domestic Violence Project.” Awarded by the Ohio Office of Criminal Justice Services. ($59,479).


Peer Review Presentations/Posters
N/A

Work or Professional Experiences
2009- Associate Professor, Sam Houston State University, College of Criminal Justice.

2003-2009  Associate Professor with tenure, Bowling Green State University, Criminal Justice Program, (August 2003).


2003-2009  Graduate Coordinator, Masters of Science in Criminal Justice degree program, Bowling Green State University, (August 2003-June 2009).


1998  Acting Director, Bowling Green State University, Criminal Justice Program, (January to July 1998).


1992-1997  Research Associate, Center for Criminal Justice Research, University of Cincinnati, (September 1994 to August 1997).


Honors and Awards

Nominee, Clyde R. Willis Faculty Development Award (2002-2003), Bowling Green State University.

Nominee, Outstanding Young Scholar Award (2002), Bowling Green State University.

Kathleen Turner Leadership Award (1992), Department of Criminal Justice, University of Massachusetts at Lowell.

Other Competencies
Curriculum Vitae – Ilona Petrikovics
Associate Professor of Chemistry

Sam Houston State University
Department of Chemistry
College of Sciences
Box 2117
Huntsville, TX 77341

Phone: (936)294-4389
Email: ixp004@shsu.edu

Academic Training

Ph.D. in Medicinal Biology, (minors: Chemotherapy and Microbiology), University Medical School, Debrecen, Hungary, Europe, 1985
Ph.D. in Organic Chemistry, (minor: Biochemistry), L. Kossuth University of Arts and Sciences, Debrecen, Hungary, Europe, 1982
M.S. in General Chemistry, L. Kossuth University of Arts and Sciences, Debrecen, Hungary, Europe, 1979
Post-doctoral Research Associate of Texas A&M University, College Station, TX (1990-1992)

Work and Professional Experience

(2007-Present) Associate Professor of Chemistry (Tenured) Sam Houston State University, Huntsville, TX. Field: Enzyme mechanism in drug antagonism; Enzyme and drug delivery systems; Drug formulation, Chemical warfare agent antagonism.

(2006-2007) Battelle Contractor, (on sabbatical leave) U.S. Army Medical Research Institute of Chemical Defense, Aberdeen, MD. Field: Cyanide research

(2004-2006) Research Fellow, Clinical Pharmacology Laboratory, Department of Anatomy, Physiology and Pharmacology, College of Veterinary Medicine, Auburn University, AL. Field: Clinical Pharmacology (pharmacokinetics); Studies with drugs and metabolites (analytical method development)

(2004-2005) Associate Research Scientist, Department of Biochemistry & Biophysics, Texas A&M University, College Station, TX. Field: Enzyme immobilization and nanotechnology applications for detection, decontamination and antagonism of chemical warfare agents.

(2003-2004) Research Analytical Chemist, Clinical Pharmacology and Analytical Chemistry Laboratory, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX. Field: Clinical Pharmacology studies. Analytical detection method development for drugs and metabolites in body fluids and tissues; Drug stability studies.


(1992-2002) Assistant Research Scientist, Department of Medical Pharmacology and Toxicology, Texas A&M University, College Station, TX. Field: Toxicology - Drug toxicity and antagonism; Drug delivery systems (Liposomes, enzyme carrier polymers, cyclodextrins, nano-encapsulation technology).
(1990-1992) Research Associate, Department of Medical Pharmacology & Toxicology, Texas A&M University, College Station, TX. Field: Toxicology - Mechanism of drug antagonism, enzyme mechanism and toxicokinetics in carrier red blood cells. (Noxious gases, pesticides).


(1982-1985) Research Associate, Dept. of Chemotherapy, University Medical School, Debrecen, Hungary. Field: Kinetic studies on microbial beta-lactamases; Beta-lactamase resistance.


Scholarly and Creative Contributions

Peer-Reviewed Publications

Articles (Name of the team member students at SHSU underlined)

(1) Bhandari, Ray, Oda, R., Youso, S., Petrikovics, I., Rockwood, G.A. Simultaneous determination of cyanide and thiocyanate in plasma by chemical ionization gas chromatography mass-spectrometry (CI-GC-MS). Accepted. Manuscript No. ABC-00887-2012.R1


(19) Logue, B.A., Kirschten, N.P., Petrikovics, I., Moser, M.A., Rockwood, G.A., Baskin, S.I. Determination of the cyanide metabolite 2-aminothiazoline-4-carboxylic acid in urine and


**Book Chapters**


(8) Ilona Petrikovics and David Thompson, Physicochemical Properties, Occurrence, Synthesis, Uses and Applications of Cyanide. In: Cyanide …….. Wiley Publication, Edited by Gary Rockwood and Gary Isom……….. (the bookchapter will be submitted by December, 2012)

**Proceedings**


**Patent Applications**

(1) JASZBERENYI CSABA, BOGNAR REZSO, PETRIKOVICS ILONA, SIMONIDESZ VILMOS, HUHN MAGDA, REMPORT JULIA, KOVACS GABOR, KULCSAR GABOR, BENESCH LUKRECIA, MARMAROSI KATALIN: Phosphorus containing
semisynthetic cephalosporanic and penicillanic acid derivatives. Chinoin Gyogyszer Es Vegyeszet December 1984:GB2141124


(2) BOGNAR REZSO, JASZBERENYI CSABA, FARKAS ERZSEBET, PUNYICZKI MARIA, HERNADI FERENC, EKE KATALIN, PETRIKOVICS ILONA: Derives de beta-lactame, les compositions pharmaceutiques les contenant et leur procede de preparation.Chinoin Gyogyszer Es Vegyeszet January 1983:FR2509311


(3) JASZBERENYI CSABA, BOGNAR REZSO, PETRIKOVICS ILONA, SIMONIDESZ VILMOS, HUHN MAGDA, REMPOR JULA, RADOCZI NEE, KOVACS GABOR, KULCSAR GABOR, BENESCH LUKRECIA, MARMAROSI-NEE-KELLNER KATALIN: Phosphorus containing semisynthetic cephalosporanic and penicillanic derivatives. Chinoin Gyogyszer Es Vegyeszet April 1985:FR2552764


(4) BOGNAR REZSOE, JASZBERENYI CSABA, FARKAS ERZSEBET, PUNYICZKI MARIA, HERNADI FERENC, EKE KATALIN, PETRIKOVICS ILONA: Verfahren zur Herstellung von beta-Lactam-Verbindungen. CHINOIN GYOGYSZER ES VEGYESZET October 1983:DD203053


(5) JASZBERENYI CSABA; BOGNAR REZSOE; PETRIKOVICS ILONA; SIMONIDESZ VILMOS; HUHN MAGDA; REMPOR JULA; KOVACS GABOR; KULCSAR GABOR; BENESCH LUKRECIA; MARMAROSI TAMASNE: Process for the production of derivatives of semisynthetic cefem carboxylic acids containing phosphorus and preparations containing such compounds. CHINOIN GYOGYSZER ES VEGYESZET January 1987:HU191212.


(6) JASZBERENYI CSABA; BOGNAR REZSOE; PETRIKOVICS ILONA; SIMONIDESZ VILMOS; HUHN MAGDA; REMPOR JULA; KOVACS GABOR; BENESCH LUKRECIA; MARMAROSI TAMASNE; KULCSAR GABOR: Process for producing semisynthetic penicillin derivatives containing phosphorus and pharmaceutical compositions containing them. CHINOIN GYOGYSZER ES VEGYESZET January 1987:HU191213. Also published as: HUT34034.
Peer-Reviewed Presentations/Posters (Name of the team member students at SHSU underlined, Presenters are labeled with * / **)


**Presentation at Regional Meetings by my Students at SHSU**

*(Name of the team member students at SHSU underlined, Presenters are labeled with * / **) 


(10) Negrito, M*, Winner, B., Rasheed, S., Kovacs, K., Petrikovics, I. Optimization of Micellar and Emulsion Type Formulations for Developing Cyanide Antidotes, ACS Regional Meeting, November, 2012, Baton Rouge, TX.


(12) Ancha, M.*, Feleke, B., Kovacs, K., Petrikovics, I**. Screening of Sulfur Donors for in vitro Thiocyanate Conversion Efficiency. ACS, 67th Southwest Regional Meeting, November 9-12, 2011, Austin, TX.


(14) Nasr, J.*and Petrikovics, I.** Analytical Method Development for Measuring the Cyanide Metabolite, 2-Aminothiazoline-4-Carboxylic Acid, as a Biomarker for Cyanide Exposure in Mice Organ Samples by HPLC-MS/MS. Texas Undergraduate Research Day at the Capitol, February 2011, Austin, TX.


(17) Stafford, K* New Analytical Method Development for Determination of the Biomarker, 2-Aminothiazoline-4-Carboxylic Acid (ATCA), in Mice after Cyanide Exposure. Sam
Houston State University College of Criminal Justice, 2nd Annual Undergraduate Conference. April 21, 2010, Huntsville, TX. (First Place Award)


(19) Stafford, K.*, Yu, J. C.C., Myagmarjav, B.E., Petrikovics, I. Sample Preparation Method Development for Determining the Biomarker, 2-Aminothiazoline-4-Carboxylic Acid (ATCA), from Mice Liver after Cyanide Exposure. 113th Annual Meeting of Texas Academy of Science, March 4-6, 2010, Tarleton State University at Stephenville, TX.

(20) Martin, S.*, Kuzmicheva, G., Petrikovics, I. Study of Effectiveness of Rhodanese Encapsulation into Stealth Liposomes. 113th Annual Meeting of Texas Academy of Science, March 4-6, 2010, Tarleton State University at Stephenville, TX.


(22) Pipken, A.*, Petrikovics, I., Thompson, D.E. Tailoring a surface enhanced Raman Sensor for the detection of the cyanide metabolite, 2-aminothiazoline-4-carboxylic acid. 113th Annual Meeting of Texas Academy of Science, March, 4-6, 2010, Tarleton State University at Stephenville, TX.

(23) Stafford, K.*, Jackson, R., Yu, J.C.C, Petrikovics, I.** Analytical Method Development for Determining the Biomarker, 2-Aminothiazoline-4-Carboxylic Acid (ATCA), in Mice Liver after Cyanide Exposure. ACS 65th Southwest Regional Meeting, November 4-7, 2009, El Paso, TX.


Honors and Awards (SHSU, 2007-2011)

- Nomination for SHSU Mentor Award (2010 and 2011)
- Nomination for SHSU Research Award (2011)
- Nomination for Society of Toxicology National Mentor Award (Pending, 2012)

Other Competencies

- Full Member of the American Society of Toxicology (1992-2002), and (2007-Present)
- American Chemical Society (2009-Present)
- SHSU IUCAC Committee Membership (2011-Present)

External Funding (SHSU, 2006-2012)

1) “Catalytic Bio-Scavengers with Broad Specificity Against OP Nerve Agents”
NIH Funding, 5 UG1 NS058035-02. Principal Investigator: Wild, James, R. (TAMU) 10/01/06 – 09/30/11, $1,710,206.


2) “Investigation of Sulfur Donors for Cyanide Antagonism”
Project Leader at the Army: Dr. Gary Rockwood, Principal Investigator at SHSU: Dr. Ilona Petrikovics. Type: Contract

- NIH:NIAID/USAMRICD Interagency Agreements (W911NF-07-D-0001), USAMRICD under the auspices of the US Army Research Office Scientific Services Program administered by Battelle (Delivery order 0557, Contract No TCN 08284). (SHSU-22023)
  - Y2: (Sept1, 2009-Aug 31, 2010): $208,305
• NIH:NIAID/USAMRICD Interagency Agreements (W911NF-07-D-0001), USAMRICD under the auspices of the US Army Research Office Scientific Services Program administered by ORISE. (SHSU-28023)
  o Y1: (Sept 1, 2010-Aug 31, 2011): $218,682

• NIH:NIAID/USAMRICD Interagency Agreements (W911NF-07-D-0001), USAMRICD under the auspices of the US Army Research Office Scientific Services Program administered by Battelle (Delivery order 0557, Contract No TCN-11-078). (SHSU-28031).
  o Y1: (Sept 1, 2011-Aug 31, 2012): $237,844
  o Y2: (Sept 1, 2012-Aug 31, 2013): $219,680
Christopher P. Randle
Associate Professor
Sam Houston State University
Department Biological Sciences
1900 Avenue I
Huntsville, Texas 77340

Communications:
Tel: (936) 294-1554
randle@shsu.edu

Major Research Interests
Plant evolution and systematics, parasitic plant evolution, molecular evolution, and theoretical phylogenetics.

Appointments
August 2012-present: Associate Professor, Department of Biological Sciences, Sam Houston State University.
August 2006-2012: Assistant Professor, Department of Biological Sciences, Sam Houston State University.

Post-Doctoral Experience
Supervisor: Mark Mort, University of Kansas
Supervisor: Daniel J. Crawford, University of Kansas.

Education

Teaching Experience
Lecturer. Sam Houston State University.
Introduction to Botany (BIO 161/BIOL 1311): 2006-Present
Introductory Genetics (BIO 345): Fall 2007-Spring 2008
Principles of Systematics (as BIO 531, 536): 2006-Present
Decision-Making: Coping in a Complex World (HON 231): 2009-Present
Molecular Biology (BIOL 4480): Fall 2011
Graduate Teaching Assistant. The Ohio State University. September 1997-June 2004.
Plant Biology 101 lab (Autumn 1997; Autumn 1998); Plant Biology 102 lab (Winter 1998); Plant Biology 102 lecture (Summer 1998); Local Flora 210 lab (Spring 1998); Animal Diversity and Systematics lab 405.5 (Spring 2001); Molecular Ecology 610 (Spring 2004).
**Teaching Experience ctd.**

Introduction to German 110 (Fall 1992; Fall 1993); Introduction to German 111 (Winter 1993); Introduction to German 112 (Spring 1993). Organic Chemistry 220 (Fall 1994)

**Honors and Awards**

One of six top-funded researchers, SHSU 2012

Student Award: Best Presentation, Systematics. S. African Association of Botanists. 2002

Delzie Demaree Award. 1999.

Service Award for work performed as vice-president of Hiram College Student Senate, 1995.

Phi Beta Kappa, 1995.


**Service**

Member of the Governing Council of the Willi Hennig Society, 2012-present


Editorial Board: *Systematic Biology* 2007-present

Botany Committee Chair: SHSU Dept. of Biol. Sci. The committee was charged with revamping Botany labs (BIO 111/BIOL 1111) and the creation of a new lab manual. 2008-2009.

Genetics Professor Search Chair: 2007-2008.


**Current Memberships in Professional Societies**

American Society of Plant Taxonomists; Botanical Society of America, Society for Systematic Biology, Willi Hennig Society.

**Grants and Fellowships**

**Active Grants**


Previous Grants
Arthur G. Seeligson, Jr. Conservation Grant (Fort Worth Zoo) 2009: $5,000.
Enhancement Grant for Research, Sam Houston State University 2008: $17,496
Beckman-Coulter Genomics Educational Grant 2008: $50,000
Faculty Research Grant, Sam Houston State University 2007: $4,767
Presidential Fellowship, The Ohio State University 2003-2004: $15,000 (stipend)
Professional Development Travel Award, The Ohio State University 2001: $450
National Science Foundation Doctoral Dissertation Improvement Grant, 2001: $10,000
Graduate Student Alumni Research Award, The Ohio State University, 2001: $2,000
American Society of Plant Taxonomists Graduate Student Research Grant, 2000: $1,000
Sigma Xi Graduate Research Grant, 2000: $800
Janice Carson Beatley Herbarium Award, The Ohio State University, 1999 and 2000:
Total $2,000
International Student Dissertation Travel Grant, The Ohio State University, 1998: $2,000

Current Manuscripts

Peer-reviewed Publications [27]


**Invited Seminars and Workshop Presentations** [13]


RANDLE, C.P. 2009. Can we see the Forest and the Tree? Lone Star College at North Harris Phylogenetics Symposium, Houston, TX.

RANDLE, C.P. 2007 Systematics and photosynthetic gene evolution of the parasitic genus Harveya (Orobanchaceae). Department of Plant Biology, University of Texas at Austin.


RANDLE, C.P. 2004. Parasitic plants: Notes from the Underground. Old Dominion University, Department of Biology Seminar. Norfolk, VA.


Presentations, Posters, and Abstracts [38]


population genetic structure. Texas Invasive Plant & Pest Conference - Trinity University, San Antonio TX.


ACADEMIC TRAINING
1997  Ph.D. Physical Chemistry, Oregon State University, Joseph Nibler – Research Advisor
1992  B.S. Chemistry, University of Texas at Austin, Joseph Lagowski – Undergraduate Research Advisor

SUMMARY OF WORK EXPERIENCE
2010 – present  Associate Professor, Chemistry, Sam Houston State University, Huntsville, TX
2004 – 2010  Assistant Professor, Chemistry, Sam Houston State University, Huntsville, TX
2001 – 2004  Section Scientist, BWXT Pantex LLC (US-DoE facility), Amarillo, TX
2001 – 2004  Adjunct Professor, Chemistry, West Texas A&M University, Canyon, TX
1997 – 2001  Assistant Professor, Chemistry, West Texas A&M University, Canyon, TX
1992 – 1997  Graduate Assistant, Physical Chemistry, Oregon State University, Corvallis, OR
1989 – 1992  Undergraduate Researcher for Dr. Joseph Lagowski, University of Texas, Austin, TX
Summer 1992  Student Research Director, Young Scholars Program, University of Texas, Austin, TX
Fall 1991  Undergraduate Teaching Assistant, University of Texas, Austin, TX

LEADERSHIP EXPERIENCES
2011 – present  Member of the Texas Higher Education Coordinating Board’s Tuning Oversight Council for Engineering and Science, and Chair of the THECB Chemistry Tuning Subcommittee.
2007 – present  Member of Huntsville Rotary Club District 5910, Member of Board of Directors (2011)
2005 – present  Faith Lutheran Church School Board Member
1999 – 2002  ACS Panhandle Plains Local Section Officer

CERTIFICATIONS AND CLEARANCES
2003  CTM Certification, Toastmasters International, Club 9440, Amarillo, TX
2002  Six-Sigma Black Belt Certification, BWXT Pantex LLC, Amarillo, TX
2002  Department of Energy Q & SCI Security Clearances, BWXT Pantex LLC, Amarillo, TX
2001  OSHA 40-Hour Hazardous Waste Operations Certification, West Texas A&M University

SCHOLARLY AND CREATIVE CONTRIBUTIONS

**FUNDED GRANTS ($387,575) WHILE AT SAM HOUSTON STATE UNIVERSITY**

2010 – pres. $112,000 Dissolved Explosive Solution Confirmation Analysis, SRA/DHS S&T Lab (#S360000115)
2008 – 2010 $99,837 Determination of HSPs for cleaning applications, DOE Pantex Plant
2008 $5,000 Development of a standardized computer model for Hansen solubility parameters, Internal-FRG
2007 – 2008 $95,671 Measurement of constants for crystalline explosives, DOE Pantex Plant
2007 $15,000 Improving the security of air travel against home-made threats, Internal-EGR
2006 $29,804 Surface tension of compositional variations of Sylgard 184 with respect to temperature and time, DOE Pantex Plant
2006 $25,263 Determining the surface tension and interfacial tension of liquids and complex mixtures, Subcontract through the University of Texas for the DOE Pantex Plant
2005 $5,000 A study of the molecular vibrations of nitrated explosive binders, Internal-FRG

**HONORS, AWARDS, AND OTHER SPECIAL RECOGNITIONS**

2010, 2012 Outstanding Teacher – Alpha Chi National Honor Society
2008 “Best Darn Teacher in the World Award” – Phi Sigma Pi National Honor Fraternity
1994 Milton Harris Teaching Excellence Award as a GTA, Oregon State University
1993 Outstanding Teaching Assistant Award, Oregon State University, 1993

**PROFESSIONAL SERVICE**

Reviewer for the following entities: ScienceDirect Search Tools, Elsevier; Journal of Chemical Education; The Chemical Educator; US Army Corps of Engineers’ Engineer Research and Development Center (ERDC); Joint Army Navy NASA Air Force (JANNAF) Journal, Chemical Propulsion Information Analysis Center; Physical Chemistry-GRE, Texas Teacher Certification Chemistry and General Science Exams, Educational Testing Service; Journal of Physical Chemistry A

**TEACHING DUTIES - COURSES TAUGHT**

2004 – present Physical Chemistry – Spectroscopy (Fall) and Thermodynamics (Spring)
2005 - present Forensic Chemistry
2006 – present Graduate Thermodynamics
2005Su, 2010Su Inorganic & Environmental Chemistry Lecture and Lab
1997 – 2002 Environmental Chemistry
1997 – 2001 Instrumental Analysis
1997 – 2001 Analytical Chemistry
1997 – present Graduate Molecular Spectroscopy
1997 – present General Chemistry I and II
CURRICULUM VITAE
Justin K. Williams, Ph.D.
Department of Biological Sciences
Sam Houston State University
Huntsville, TX  77341-2116
(936) 294-1552
e-mail: bio_jkw@shsu.edu

EDUCATION:

TEACHING AND RESEARCH EXPERIENCES:
Assistant Professor of Biology, Sam Houston State University
Current Teaching Responsibilities: Botany (Freshman level; 140 students), General Ecology lecture and laboratory (Junior level; 20-30 students), Plant Taxonomy (Senior level, 30 students).

EXPERTISE:

SECONDARY TITLES:
Director Warner Herbarium, Dept. of Biology, Sam Houston State University (2001-present)
Research Associate Plant Resources Center, University of Texas at Austin (2001-present)

PROFESSIONAL EXPERIENCE:
2007-present  Associate Professor: Sam Houston State University
2001-2007  Assistant Professor: Sam Houston State University
2000-2001  Director: Zilker Botanical Garden, Austin Texas
1998-2000  Project Coordinator: Texas Research Institute for Environmental Studies, Sam Houston State University Huntsville, Texas.
1997-1998  Assistant Curator: Plant Resources Center, U.T.Austin
1994-1998  Teaching Assistant: University of Texas, Department of Botany
PROFESSIONAL ORGANIZATIONS:
American Society of Plant Taxonomist
Sigma Xi Scientific Research Society
Phi Kappa Phi Honor Society

CONTRACTS/GRANTS while at Sam Houston State University:
(Total $1,810,160; Managed $1,104,701 as PI).

Williams, J.K. (P.I.) and W. Lutterschmidt. 2004. Land Use Practices and its Effect on Ecosystem Dynamics along the Rio Grande. A USDA funded grant run through the cooperation of the Texas State University System. The project is fully funded at $1,200,000 with SHSU receiving $140,000 for 2005; $75,000.00 has been funded for 2006. $159,000 has been funded for 2007. FUNDED.


Williams, J.K. “An Analysis of the Correlation between Vegetation and Soils at Camp Swift,” Adjutant General’s Department, Texas Army National Guard Austin, Texas, August 2002, $15,000. FUNDED.


Williams, J.K. “Species survey of the Sam Houston State University campus,” Sam Houston State University Physical Plant, Huntsville, Texas, August 2002, Requested: Salary for student researcher; Received: estimated $5,000. FUNDED.

Williams, J. K. (P.I.), and R. Rush. Wetland Delineation Report. Larry Klotz, Manufactured Housing Community Development. $4,056 FUNDED


PUBLICATIONS:


PROFESSIONAL REPORTS


Williams, J. K. 2002. Inventory of the trees of Sam Houston State University Campus, Office of Research and Sponsored Projects, Sam Houston State University (October 31, 2002).


PRESENTATIONS AND INVITED SEMINARS:

Williams, J. K., A. Gaillard, C. Hargrave, and W. I. Lutterschmidt. Multi-variant analysis of Invasive Plants and Land Condition on the Biodiversity of Fish Assemblages with the Rio Grande. Southwestern Association of Naturalist, Memphis, TN. April 10-12. To be presented.  [oral presentation]


Lutterchmidt, W. I., K. W. Luce, S. D. Koether and J. K. Williams. Land-use practices along the Rio Bravo (Rio Grande) and their influences on vegetation and ichthyofaunal communities.  SWAN, South west Association of Naturalist, Colima, Mexico 13-15 April 2006. [poster presentation]


Tanya Livshultz, David Middleton, Mary Endress & Justin Williams (Harvard University, USA; Royal Botanic Garden, Edinburgh, Scotland; Institute of Systematic Botany, Switzerland; Sam Houston State University, USA) - "Progress in systematics of subfamilies Rauvolfioideae and Apocynoideae (Apocynaceae s. str.)". International Botanical Congress; Vienna, Austria. July 2005. [oral presentation].


Williams, J.K. The Dogbane Family (Apocynaceae) of Mexico. SWAN, Cuernavaca, Mexico. April 28, 2002. Instituto de Ecologia, Xalapa Vera Cruz, August 4, 2003. [oral presentation]


Williams, J. K. Vegetation and Habitat of Golden Check Warbler and Black Vireo. Huntsville Audubon Society Apr 2002. [oral presentation].
Name: Christopher Wilson  
Title: Professor  
Department: Psychology  
College: Humanities and Social Sciences

**Degrees Earned**  
B.A., Psychology, Eckerd College, 1972  
M.A., Psychology, Texas Christian University, 1975  
Ph.D., Psychology, Texas Christian University, 1976

**Professional Licensure and Certifications**  
N/A

**Peer-Review Publications and Artistic Performances/Exhibitions**

**Articles**  


Books


Chapters
Proceedings

Artistic Performances

Artistic Exhibitions

Research Monographs and Technical Reports


Funded External Grants

Peer-Review Presentations/Posters


**Work or Professional Experiences**

**Honors and Awards**

Psychonomic Society, Full Member

Pi Delta Phi, Société d'Honneur Française, membre honoraire

**Other Competencies**

**Videos**


The College of Criminal Justice/Department of Forensic Science began recruiting one additional faculty member with a Ph.D. in the fall of 2012, with the expectation that this faculty member would be in place by the beginning of the 2013-14 academic year, where they would be responsible for instructing courses in the existing M.S. in Forensic Science in addition to research. When the Ph.D. is implemented, 25% of the time of this faculty member will be reallocated to support that program.

The recruitment of one additional faculty member will be initiated during the 2015 fall semester. The qualifications for this faculty member include a Ph.D. in biology with a specialization in genetics. This faculty member will instruct courses in forensic molecular biology, statistical and investigative genetics in addition to general forensic science courses at the graduate level. The recruitment plan for this faculty member includes advertisements in the Chronicle of Higher Education, Nature, New Scientist as well as the websites of appropriate professional organizations, including the American Academy of Forensic Sciences (AAFS), American Society of Crime Laboratory Directors (ASCLD) and the Association of Forensic DNA Analysts and Administrators (AFDAA).
Appendix E

Institution’s Policy on Faculty Teaching Load
PREAMBLE: IMPLEMENTATION PROVISIONS

- Effective with the fall 2004 semester, the University entered a transition period relating to an instructional workload conversion designed to provide additional resources to enhance faculty research, scholarship, and teaching.

- Each year, under budgetary constraints, the University allows the academic deans to reduce the normative teaching load from twelve credit hours per semester to nine credit hours per semester for selected faculty members who desire to place a greater emphasis on research productivity.

- Faculty members currently on a normative instructional load of twelve credit hours per semester who desire to place a greater emphasis on teaching, while cognizant of research responsibilities, will be allowed to remain on such a load.

- To ease reporting requirements as established by the Texas Higher Education Coordinating Board, this policy will be written from the perspective of the normative teaching load of twelve credit hours being equivalent to 1.0 FTE. Faculty on the normative nine-hour teaching load in essence are a .75 FTE for teaching and a .25 FTE for research.
  
  - Undergraduate and master’s-level three-hour courses equate to .25 FTE teaching load.
  
  - For any tenured/tenure-track faculty member on a normative nine-hour teaching load and teaching a doctoral class, 1.0 FTE is defined to be six hours of classroom instruction, regardless of any other provisions of this policy.

  - Any faculty member teaching two doctoral classes in one semester will have the option of being evaluated on either the nine-hour or twelve-hour normative teaching load.
1. AUTHORITY

The faculty workload policy for Sam Houston State University is designed to comply with V.T.C.A., Education Code §51.402, and will be reported to the Texas Higher Education Coordinating Board and included in the operating budget for the University. These guidelines reflect the essential nature of the University as a teaching institution but provide flexibility to permit accommodation of related activities essential to the effective operation of a multipurpose regional university.

2. DEFINITIONS

2.01 Normative instructional load of twelve credit hours per semester (prior to any course load reductions): The expected teaching load for a faculty member with an FES 3 weight of 0.25 (See Attachment 1).

2.02 Normative instructional load of nine credit hours per semester (prior to any course load reductions): The expected teaching load for a faculty member with an FES 3 weight of 0.40 (See Attachment 1).

2.03 The workload for department/school chairs is not covered by this workload policy. The workload for a department/school chair is directly related to the number of faculty FTEs in the department/school. The specific instructional workload for chairs is detailed in Attachment 2.

2.04 Teaching assistants are graduate students who are pursuing degrees and are assigned part-time instructional duties commensurate with their academic preparation and experience. Such duties for which prorated salaries are paid include responsibility for organized classes; regularly scheduled discussion, quiz, or laboratory sections; or other duties directly involved in instructional activities. Teaching assistants are not covered by this workload policy.

3. WORKLOAD POLICY

The workload policy recognizes that faculty members’ interests, strengths, and skills evolve throughout their careers. The University is best served by a policy that has enough flexibility to allow the academic deans, with permission of the Provost, to assign workloads that meet the University’s changing needs and interest and skill sets of the faculty. The respective colleges are responsible for documenting rationale for modifications from the normative workloads.
3.01 The normal teaching loads for faculty members paid from appropriated funds defined as Faculty Salaries within the Elements of Institutional Costs shall be either an instructional load of twelve credit hours per semester or nine credit hours per semester. Final allocation of faculty to a specified instructional load rests with the appropriate academic dean with the Provost’s approval. Departments/schools and colleges may propose deviations to the provisions of this academic policy to their academic dean.

To be eligible for this instructional load, a faculty member must be tenured or in a tenure-track position. All newly hired tenure-track faculty will be assigned to the normative instructional load of nine credit hours per semester.

a. Moving from one workload to another.

(1) Tenured/tenure-track faculty may request to change their teaching load from a twelve- to a nine-hour teaching load or vice versa. Faculty must file a written request with the department/school chair to move from one teaching load to another by April 15 for change effective in the subsequent spring semester. Approval is dependent upon availability of funding, departmental needs, and of the faculty member’s ability to successfully produce the research as evidenced by a review of supporting materials such as vitae and professional portfolio. The academic dean, with the approval of the Provost, may grant such requests.

(2) Each year, as part of the Faculty Evaluation System (Academic Policy Statement 820317), the research and scholarly productivity of the faculty on the nine-hour teaching load will be reviewed by the academic dean in consultation with the department chair. If a faculty member has not produced sustained and demonstrable research, creative, or scholarly achievement by meeting established college standards, the faculty member may be moved to the twelve-hour teaching load by the dean in consultation with the department chair and the DPTAC.

b. Normally, the equivalent FTE workload is determined by multiplying the total number of hours taught by one-twelfth (.0833). Following are exceptions to this norm:
(1) Two clock hours of scheduled class time per week in a long semester (or its equivalent in a summer term) will equate to 1/8 (.125) FTE for one-credit hour kinesiology and dance courses.

(2) Supervision of one student teacher will equate to 1/24 (.04) FTE with a maximum credit of 1/4 (.25) FTE per section.

(3) Six contact hours per week in a Studio Art course during a long semester (or its equivalent during any summer term) is equivalent to 1/3 (.33) FTE per semester.

(4) A faculty member teaching a net twelve contact hours in two studio art courses and three contact hours in lecture course in the Workshop in Studio Art and History (WASH) program will receive 1.0 FTE credit for coordination of the WASH curriculum, preparation of studio activities, and supervising studio activities outside of scheduled meeting times.

(5) A three-semester-hour course that receives field-based funding will equate to 1/3 (.33) FTE per semester.

(6) Two clock hours of scheduled laboratory time per week in a long semester (or its equivalent in a summer term) equates to 1/12 (.08) FTE semester hour of workload credit for a faculty member who teaches a formally scheduled laboratory.

(7) A faculty member may receive credit for supervising a formally-scheduled laboratory course when the faculty member directly supervises graduate or undergraduate students who serve as the instructors for the laboratory sections. Two clock hours of scheduled laboratory time per week during a long semester (or its equivalent in a summer term) will equate to 1/24 (.04) FTE per semester for a faculty member who supervises laboratory courses up to the following limit: A faculty member may receive a maximum of 1/4 (.25) FTE during any single semester or any summer term for such supervision regardless of the number of sections of a single course (or the number of student instructors) that are supervised. A faculty member may receive separate credit for each course number using this formula if laboratory sections representing different courses are supervised.
(8) Appropriate workload credit for teaching or supervising laboratory-type sessions in courses other than the sciences may be assigned by the academic dean with the approval of the Provost and Vice President for Academic Affairs.

c. Music courses other than the usual three-semester-hour courses will be equated as follows in computing normal load:

(1) Lecture class of two semester hours with three hours contact will equate to .25 FTE.

(2) Instrumental Techniques of one semester hour with three hours contact will equate to .25 FTE.

(3) Singers Diction of one semester hour with two hours contact will equate to .20 FTE.

(4) Private Applied Music:

(a) One-semester-credit-hour courses, as indicated by last number of section number, with one-half hour contact per week will equate to .0275 FTE times the number of students.

(b) Two-, three-, or four-semester-credit-hour courses, as indicated by last number of section number, with one hour of student contact per week will equate to .055 FTE times the number of students.

(c) Two-semester-credit-hour courses with one hour contact will equate to .055 FTE times the number of students.

(5) Music Composition: one-semester-hour contact will equate to .055 FTE times the number of students.

(6) Major ensemble of one semester hour with six hours of student contact will equate to .50 FTE.

(7) Minor ensemble of one semester hour with three hours of student contact will equate to .25 FTE.
(8) Chamber Music and Practicum in Music Therapy of one semester hour with one hour of student contact will equate to .20 FTE.

(9) Advanced Conducting of three semester hours with six hours of student contact will equate to .25 FTE.

(10) Class Piano of one semester hour with two hours of student contact will equate to .125 FTE.

(11) Recital of one semester hour with one-half hour of student contact will not receive load credit (equates to thesis-type courses).

d. Instructors in the above music activities may deviate from a total of 1.0 FTE for any particular semester, but it is expected that the two semesters combined will total at least 2.0 FTEs.

3.02 Accrual of credit for assignments beyond full-time load: Credit hours not compensated with overload payment and earned under these criteria may be accrued for application to a faculty member’s future workload. Once a faculty member accumulates overload hours equivalent to a one-course reduction, the released time must be taken within a three-year period, or it will be deleted.

Credit for such courses may be accrued for a maximum of three years after which time credit older than three years will be deleted. To assure that adequate faculty resources are available for the standard teaching functions of the department/school, the department/school chair will decide when the course load reduction will be granted. Such teaching load compensations can only be granted in long semesters. No more than a total of three semester hours of instructional load accrual credit may be awarded to any faculty member during a long semester.

3.03 Instructors of organized classes that are team taught will proportionally share the workload credits allowed for those classes in accordance with their distribution of responsibilities.

3.04 As the need dictates, faculty members may be requested on occasion to exceed normal teaching loads. Nothing in this workload policy should be construed to prohibit the President of the University or the Provost and Vice President for Academic Affairs from making this determination. A faculty member may be given an assignment that exceeds the normal load as defined in paragraph 2.01.
either by assignment of an extra class or by assignment of a combination of courses from different levels. In such instances, compensation for such overload will be granted in accordance with established University policy or, subject to the policies and at the convenience of the affected college, equivalent released time. A faculty member may not be paid for an overload during the semester he/she is granted released or reassigned time.

3.05 Released time accrues at the forbearance of the University and is not reimbursable by the University should an instructor terminate or have his/her employment with the University terminated prior to the utilization of said released time.

4. ADJUSTMENTS TO THE NORMAL LOAD

4.01 During the academic year, the dean of a college may grant teaching load reductions for the following reasons:

a. Full-time tenured or tenure-track faculty member for whom a scheduled class does not materialize and for whom an appropriate alternate assignment is not available. This exception is not permissible for any individual beyond two consecutive semesters without a prorated reduction of salary.

b. Full-time tenured or tenure-track faculty member for whom enrollment in a scheduled class reduces to zero after the twelfth class day. In this event, the dean of the college may assign alternative responsibilities related to the programs and purposes of the college.

c. Faculty members who are given an administrative, supervisory, or coordinator assignment directly related to the instructional programs and purposes of the University and whose assignment is subordinate to that of department/school chair. The following examples are illustrative but not intended to constitute a complete list of possibilities.

(1) Coordinator of a program, multiple-section course, or other similar responsibilities.

(2) Developer of a significant new academic program.
(3) Supervisor of radio and television programming, news gathering and transmission, and other program production in the Department of Mass Communication.

(4) Director of a major musical, dramatic, or dance stage production or the designer/director for lighting, scenes, costumes, and properties for such major productions.

(5) Faculty in Music whose professional assignments include participation in the SHSU Faculty Brass Quintet, SHSU Faculty Woodwind Quintet, and/or the SHSU Trio.

d. Instructor of one or more large classes (typically 100 students). The reduction is subject to the approval of the dean in consultation with the chair. A written justification prepared by the chair must accompany the request and should address enrollment numbers in the course(s), complexity of delivery of course material, and availability of resources that may assist in the delivery of material, e.g., teaching assistants. (Effective fall 2010.)

e. Faculty members with miscellaneous assignments such as:

   (1) Chair of a major accreditation evaluation committee.

   (2) Holder of a major office in a national professional organization.

f. Three-credit-hour-load (.25 FTE) reduction for direction to completion of five master's theses or three doctoral dissertations.

g. Released time accrued in accordance with Section 3.02 should apply during the semester immediately following the completion of the qualifying thesis or dissertation, or during the earliest possible long semester thereafter. The released time must be taken within a three-year period or the credit will be deleted.

h. Faculty members may receive instructional load credit for supervising approved internship courses. Each student who completes an approved internship course will equate to 1/60 (.001667) FTE (i.e., 15 students equate to a .25 FTE). No more than 1/4 (.25) FTE, a total of three semester
hours of instructional load credit for internship completion, may be awarded to any faculty member for any given section.

5. MONITORING FACULTY WORKLOAD POLICY

5.01 It is the responsibility of each department/school chair at the beginning of each instructional period to report to the appropriate dean the workload assignment of each faculty member within his/her academic unit.

5.02 It is the responsibility of each dean to review and to transmit to the Provost and Vice President for Academic Affairs a report of workload assignments of all faculty members within his/her academic unit, to specifically note each instance in which a faculty member's assignment deviates from the general workload policy, to explain the basis for such deviation, and to recommend approval or disapproval of the deviation.

5.03 The Provost and Vice President for Academic Affairs will have final responsibility for the approval of faculty workloads in conformity with adopted University policy subject only to review by the President and final action by the Board of Regents, The Texas State University System.

6. EFFECTIVE DATE

This revised policy becomes effective fall 2010.

APPROVED: /signed/
James F. Gaertner, President

DATE: 07/06/10
CERTIFICATION STATEMENT

This academic policy statement (APS) has been approved by the reviewer(s) listed below and represents Sam Houston State University’s Division of Academic Affairs’ APS from the date of this document until superseded.

Original Date: June 1, 1979
Reviewer(s): Council of Academic Deans
            Faculty Senate
            Academic Policy Council

Approved: /signed/ Date: 06/14/10
David E. Payne
Provost and Vice President
for Academic Affairs

*ONY = Odd Numbered Year
# ATTACHMENT 1

## TABLE I: WEIGHTS FOR FACULTY EVALUATION

### NORMATIVE WORKLOAD OF TWELVE CREDIT HOURS PER SEMESTER

<table>
<thead>
<tr>
<th>FES 1 Teaching Effectiveness</th>
<th>FES 2 Scholarly and Creative Accomplishments</th>
<th>FES 3 Service</th>
<th>FES 4 Administrative Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>.25</td>
<td>.25</td>
<td>.25</td>
<td>.25</td>
</tr>
</tbody>
</table>

### NORMATIVE WORKLOAD OF NINE CREDIT HOURS PER SEMESTER

<table>
<thead>
<tr>
<th>FES 1 Chair’s Rating</th>
<th>FES 2 Students’ Rating</th>
<th>FES 3 Scholarly and/or Creative Accomplishments</th>
<th>FES 4 Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>.20</td>
<td>.20</td>
<td>.40</td>
<td>.20</td>
</tr>
</tbody>
</table>
ATTACHMENT 2

ACADEMIC DEPARTMENT/SCHOOL CHAIR
TEACHING LOAD AND STIPEND

Department/School Chairs: The workload for a department/school chair is directly related to the number of faculty FTEs in the department/school and, in many instances, a department/school chair may have duties such as oversight of buildings, university lands, laboratory facilities, and research that cannot be adequately assessed by FTEs alone. Therefore, the base workload and stipend for a department/school chair should be based on FTE count, but a college dean (with the approval of the Provost and Vice President for Academic Affairs) may arrange with a chair to increase the stipend or reduce the workload to accommodate the extra responsibilities. The base workload and stipend are described below:

Each department/school chair, regardless of the size of the respective department/school, will teach at least one class during the fall and spring semesters. In addition, the requirement that the chair must be on campus during the summer months applies to all departments regardless of size.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>FTE SIZE</th>
<th>TEACHING LOAD</th>
<th>STIPEND</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1 to 11.99</td>
<td>Six courses (each for 3 credit hours or more) per year [i.e., two each long semester and two in the summer]. Must be on campus in the summer.</td>
<td>Negotiable based on FTEs, a minimum of $2,100 and a maximum of $2,400 per year.</td>
</tr>
<tr>
<td>B</td>
<td>12 to 20.99</td>
<td>Five courses (each for 3 credit hours or more) per year. Must be on campus in the summer.</td>
<td>$3,600 per year</td>
</tr>
<tr>
<td>C</td>
<td>21 to 29.99</td>
<td>Four courses (each for 3 credit hours or more) per year. Must be on campus in the summer.</td>
<td>$4,800 per year</td>
</tr>
<tr>
<td>D</td>
<td>30 or more</td>
<td>Three courses (each for 3 credit hours or more) per year. Must be on campus in the summer.</td>
<td>$6,000 per year</td>
</tr>
</tbody>
</table>
CAD AMENDMENT (February 2003): Each department/school chair, regardless of the size of the respective department/school, will teach at least one class during the fall and spring semesters. In addition, the requirement that the chair must be on campus during the summer months will apply to all departments regardless of size.

CAD AMENDMENT (March 2007): Chairs are allowed an assistant chair(s) or programs coordinator(s) with administrative release to be approved by the academic dean and the Provost.
Appendix F

Itemized List of Capital Equipment Purchases

1. Allegra x-22 Centrifuge (01/03/2007)………………………………………………………….$5,874.54
2. Varian FTIR Spectrometer (06/12/2007)……………………………………………………….$32,532.00
3. Carl Zeiss Polarizing Light Microscope Axio Imager (08/07/2007)………………….$41,499.70
4. Applied Biosystems PCR system 9700 (08/03/2007)………………………………………. $8,051.00
5. Agilent Gas Chromatograph NPD/FID (08/31/2007)……………………………………….. $43,821.20
6. Applied Biosystems API 3200 LCMSMS (06/14/2007)…………………………………….. $172,332.00
7. Applied Biosystems Real Time PCR system (08/03/2007)……………………………… $24,808.00
8. Allegra 64A Beckman Refrigerator Centrifuge (08/01/2007)……………………………… $9,365.13
9. Frontier Pyrolyzer (01/30/2008)…………………………………………………………………….$45,260.00
10. Keyence Microscopic Imaging System (10/01/2007)……………………………………… $45,899.94
11. Thermo Gas Chromatograph Mass Spectrometer DSQ II (01/10/2008)………………….. $108,877.00
12. Leica Comparison Microscope (10/16/2008)………………………………………………….. $69,864.20
13. Leica Steromicroscope (10/16/2008)……………………………………………………………… $11,764.50
15. TurboVap LV Workstation (01/05/2010)……………………………………………………… $5,886.90
16. Mastercycler Gradient (01/04/2010)……………………………………………………………… $6,875.18
17. Applied Biosystems 3500 Genetic Analyzer (02/25/2011)………………………………… $100,880.00
18. Leica DM750p Polarizing Microscope (10/01/2009)………………………………………… $7,435.65
19. Leica EC3 Microscope (10/19/2009)……………………………………………………………… $10,373.05
20. Nicolet 6700 FTIR Spectrometer (12/01/2009)……………………………………………… $71,749.04
23. QiaCube (11/30/12)……………………………………………………………………………….. $19,759.70
24. Cold Vault Walk in Freezer (07/07/2009)……………………………………………………… $15,210
25. John Deere 4x2 Gator (8/11/2008)……………………………………………………………… $5,417.03
26. Bobcat Compact Excavator (01/25/2009)……………………………………………………….. $15,239.00
27. Speckfinder HD Digital Computer Microscope (07/06/2009)……………………………… $7,157.50
29. Isomet 1000 Precision Saw (10/31/11)…………………………………………………………. $7,470.00
30. Disk Array Enclosure (08/10/2010)……………………………………………………………. $29,400.16
31. Portable Cadaver Scissor Lift (12/05/2011)…………………………………………………… $7,311.00
32. Bone Digitizer (08/31/12)……………………………………………………………………….. $6,695.00

Total………………………………………………………………………………………………………. $1,120,419.94
Appendix G

Librarian's Statement of Adequate Resources
January 14, 2013

Dr. Sarah Kerrigan, Chair  
Department of Forensic Science  
College of Criminal Justice  
Box 2525  
Sam Houston State University  
Huntsville, TX 77341

Dear Dr. Kerrigan:

A review of the library’s collection of information resources for the doctorate in Forensic Science, found that the collection can support this degree without any additional costs.

The Library provides the Sam Houston State University community with access to a collection of over 1.3 million books and journals in both print and electronic format. For the Forensic Science doctorate 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 and full text 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. A “Virtual Reference Desk” provides students with real time access to a librarian who can guide students to the appropriate resource, or help develop a research strategy.

For those resources not immediately available at Sam Houston State University, interlibrary loan and the Texas shared resources program will provide access. All Texas state institutions and many private universities participate in TexShare, a cooperative resource-sharing program which permits borrowers in good standing at their home institution to obtain books on-site at participating institutions. The library will monitor the demand for document delivery and interlibrary loan services to determine the need for additional journals as the program grows and specific research areas are identified.

We in the library wish you well with this program. It will be an asset to the university. Please let me know if I can be of further assistance.

Sincerely yours,

Ann H. Holder  
Director of Library Services

Sam Houston State University is an Equal Opportunity/Affirmative Action Institution

Huntsville, Texas 77341-2179 • 936.294.1613 • Fax 936.294.3780
Appendix H

Articulation Agreements with Partner Institutions

Not Applicable
Appendix I

Action Plan for Improving Undergraduate Success Measures

Not Applicable
Recommended Appendix A

Requests for Addition of New Courses
FORM B
REQUEST FOR ADDITION OF A NEW COURSE

I. Course Identification
   a. Proposed prefix and number: FORS 6333
   b. Proposed title (30 Character Max): Behavioral Genetics
      c. Proposed catalog description including prerequisites and credit: This course provides students with an understanding of behavior genetics and the influence of genes and the environment on emotion, personality and behavior in humans and animals. Credit 3.
   d. Companion course/Co-requisite: N
   e. May course be repeated for credit? No
   f. Maximum number of credit hours that can be earned: 3
   g. Is course eligible to receive a grade of IP? No If yes, justification:
   h. Is this course exempt from the 3-peat charge? No; If yes, justification:
   i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) N/A; if yes, attach Writing Enhancement Supplement.
   j. Identify the majors and/or minors for which this course will be required: None
   k. Identify the majors and/or minors for which this course may be an elective: Master's in Forensic Science, Criminal Justice and Psychology; PhD in Criminal Justice and Forensic Science.

II. Statement of Need and Program Compatibility
   a. Justify the need for this course, including how the proposed course will support the present program curriculum.
   The MSFS program is accredited by the Forensic Science Education Programs Accreditation Commission (FEPAC). Accreditation standards require us to provide advanced discipline-specific electives. This course will serve as an elective for both the Forensic Science and Criminal Justice Master’s programs. The Behavioral Genetics course will satisfy the need for advanced discipline-specific study and support the curriculum by offering an investigative genetics course that focuses on emotion, personality and behavior. This topic is highly applicable to forensic science and criminology and will complement existing research, external funding and other activities at SHSU in the area of behavioral genetics. This course is also proposed as an elective for the PhD in Forensic Science.
   b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc. Existing faculty have the expertise to teach this course. No additional faculty are required and faculty assignments can be modified to accommodate the new course by adding the course to the rotation of elective courses which have been offered previously as special topics courses. The course is proposed as an elective and will not influence degree requirements.
   c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses. There are no similar course offerings available.
   d. Identify who is likely to be the instructor(s) of this course.
   Dr. Todd Armstrong; Dr. Danielle Boisvert; Dr. Brian Boutwell; Dr. David Gangitano.

III. Course Content
   a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).
      **Upon completion of this course, the student will be able to:**
      1) Describe behavioral genetic methods including behavioral genetics, quantitative genetics and linkage and association designs.
2) Analyze behavioral genetic data including data from twin and adoption studies and data with information regarding specific genetic variation.
3) Conduct case control comparisons that identify genetic variation distinguishing one sample from another.
4) Discuss major trends in the behavioral genetics literature, identifying the strengths and weaknesses within this literature and identifying potential contributions to the literature.
5) Write a literature review for a scholarly contribution to the behavioral genetic literature.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). If the text is more than 5 years old, please provide a justification.

<table>
<thead>
<tr>
<th>Author</th>
<th>Title And Publisher</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yong-Kyu Kim</td>
<td>Handbook of Behavior Genetics</td>
<td>2010</td>
</tr>
</tbody>
</table>

c. Using a 15-week class schedule, identify the topics to be covered during each week of the semester:

| Week 1 | Course Overview and Introduction to Behavioral Genetics |
| Week 2 | Quantitative Methods - Twin and Adoption Studies |
| Week 3 | Quantitative Methods - Molecular Genetic Studies |
| Week 4 | Quantitative Methods - Linkage and Association Designs |
| Week 5 | Quantitative Methods - Disentangling Genetic and Environmental Effects |
| Week 6 | Genetic Variation and Brain Structure and Function |
| Week 7 | Genetic Variation and Personality |
| Week 8 | Psychopathology I: ADHD, Impulsivity, Depression, and Stress |
| Week 9 | Psychopathology I I: Aggression and Psychopathy |
| Week 10 | Endophenotypes for Antisocial Behavior |
| Week 11 | The Genetics of Drug Abuse I: Genetic Variation and Drug Abuse |
| Week 12 | The Genetics of Drug Abuse II: Genetic Variation in Treatment Outcomes |
| Week 13 | The Genetics of Crime, Delinquency and Antisocial Behavior I |
| Week 14 | The Genetics of Crime, Delinquency and Antisocial Behavior II |
| Week 15 | Applied Research in Behavioral Genetics |

IV. Library materials required for this course. This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

a. Please indicate the types of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the extent of use anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

<table>
<thead>
<tr>
<th>Types of print/electronic library resources needed</th>
<th>Extent of use anticipated (on a scale of 0 to 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholarly, Peer-Reviewed Journals</td>
<td>7</td>
</tr>
<tr>
<td>Electronic Databases</td>
<td>7</td>
</tr>
<tr>
<td>Books</td>
<td>2</td>
</tr>
<tr>
<td>Trade Journals</td>
<td>0</td>
</tr>
<tr>
<td>Newspapers</td>
<td>0</td>
</tr>
<tr>
<td>Popular Magazines</td>
<td>0</td>
</tr>
<tr>
<td>Audio-Visual</td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>0</td>
</tr>
</tbody>
</table>
b. Please identify **specific** resources that the Library needs to **acquire** in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc. Please identify **new titles** that should be acquired or **subject areas** in the collection that may need to be **enhanced** or **updated**.

New titles needed or subject area to be enhanced:
Plomin, DeFries, McClearn and McGuffin, Behavioral Genetics 5th edition, Worth Publishers

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.

No additional equipment is needed for this course.

---

*After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.*
FORM B

—CHECK LIST—

Please check each box to verify review.

Overall

☒ The version of Form B currently posted on the Academic Affairs website under Curriculum Forms is being used.
☒ Font is Times New Roman, 11 pt, no bold, no “all caps.”
☒ The form has been proofed for spelling and grammar errors. Please note that the Form B template does not have grammar and spell check.
☒ Every question has a response. If there is not an affirmative response, use “N/A,” “No,” or “None” as appropriate.

Part I - V

☒ I.c. The catalog description is in complete sentences.
☒ Course catalog descriptions should be understandable to members outside the discipline. Avoid acronyms, abbreviations and terminology specific to the discipline not usually recognized by the general public. Commonly recognized terminology is acceptable, e.g., NASA, DNA, S Corporation.
☒ The final sentence of the catalog description lists any prerequisites, followed by credits, e.g., Prerequisite: IT 161. Credit 3.
☒ Use terms such as “basic,” “fundamental,” “introduction,” and “overview” sparingly. Upper division courses should seldom be introductory.

☒ I.d. Companion courses require concurrent enrollment. This is a rare occurrence. If applicable, the companion course should be listed in the course description.

☒ I.i. If the course is proposed to be writing enhanced, course requirements listed in the 15-week class schedule should reflect writing assignments.

☒ II.b. There is nearly always an impact if a new course is added. Adding a new course may require that new faculty be hired or existing teaching assignments be modified, existing courses be deleted, or degree requirements be modified. Offer specific explanation of the modifications.

☒ II.c. Review SHSU course offerings to identify courses with similar titles or content. Err in favor of listing courses that potentially could overlap. Include documentation of discussions with appropriate departmental chairs to avoid duplication.

☒ III.b. Note that the form requires both Title and Publisher. Do not omit the publisher.

Provide a justification if the proposed texts are more than five years old. Check to see if proposed textbooks over two years old are out-of-print.

☒ III.c. If the course features differential content or directed study, provide a sample 15-week class schedule.

☒ IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Sarah Kerrigan 9/14/2012
Department Chair Signature Date College Curriculum Committee Chair Signature Date
LIBRARY COLLECTION REVIEW for PROPOSED COURSE

Proposed Course Prefix and Number: FORS 6333
Proposed Title: Behavioral Genetics

1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses covering related content as the proposed course, including: PSYC 5330 -- Psychopathology, PSYC 5360 -- Advanced Physiological Psychology, PSYC 7339 -- Developmental Psychopathology, PSYC 7374 -- Human Neuropsychology, and CRIJ 6360 -- Seminar in Deviant Behavior.

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. The most relevant electronic books are provided by CRCNetbase (contains titles such as Neurobiology of Aggression and Rage, Biological Influences on Criminal Behavior, Forensic and Medico-legal Aspects of Sexual Crimes & Unusual Sexual Practices, Biobehavioral Resilience to Stress, and Serial Offenders: Current Thought, Recent Findings). Additional electronic books can be found in Ebsco ebooks and ebrary.

The Library’s print collection includes items on Aggressiveness, Mental Illness--Genetic aspects, Criminal Behavior -- Genetic Aspects, Behavior Genetics, Psychiatric Epidemiology, Psychology – Pathological, Twins – Psychology, and Genetic Psychology.

Citations for peer reviewed articles are available through an interdisciplinary mix of databases such as Science Direct, Biological Abstracts, Web of Science, MEDLINE, PsycARTICLES, PsycINFO, and Ebsco’s Psychology & Behavioral Sciences Collection. Some of the indicated databases provide full text of journals articles, including: Behavior Genetics, Behavioral Neuroscience, Journal of Abnormal Psychology, Journal of Individual Differences, and Psychology of Violence.

Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

The one requested title, Behavioral Genetics 5th edition, retails for $145.99. This can easily be purchased with existing funds.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed: Susan Strickland ____________________________ Date: 15 September 2012
Bibliographer

Signed: Ann H. Holder ____________________________ Date: 9/17/12
Library Director
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:
Proposed Title:

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: ___________________________ Date: ___________________________

Writing Enhanced Committee Chair
FORM B
REQUEST FOR ADDITION OF A NEW COURSE

I. Course Identification
   a. Proposed prefix and number: FORS 6335
   b. Proposed title (30 Character Max): Advanced Forensic Chemistry
   c. Proposed catalog description including prerequisites and credit: This course will address novel scientific techniques in crime scene chemistry and crime lab chemistry. Non-destructive optical methods developed for sensing or identifying physical evidence are particularly emphasized in this course. New developments in chromatographic, spectroscopic and microscopic techniques for the analysis of fibers, hair, gunshot residue, ink, paints, glass, explosives and narcotics will also be explored. Prerequisite: FORS 5335, FORS 5445. Credit 3.
   d. Companion course/Co-requisite: No
   e. May course be repeated for credit? No
   f. Maximum number of credit hours that can be earned: 3
   g. Is course eligible to receive a grade of IP? No If yes, justification:
   h. Is this course exempt from the 3-peat charge? No; If yes, justification:
   i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) N/A; if yes, attach Writing Enhancement Supplement.
   j. Identify the majors and/or minors for which this course will be required: None
   k. Identify the majors and/or minors for which this course may be an elective: MS in Forensic Science, PhD in Forensic Science, MS in Chemistry.

II. Statement of Need and Program Compatibility
   a. Justify the need for this course, including how the proposed course will support the present program curriculum.
      This course was offered previously as a special topics course (elective) for the Master of Science in Forensic Science (MSFS). The course is required to support the growing enrollment in the forensic science program and in particular, student interest in the discipline of forensic chemistry and trace evidence techniques. This course will also serve as an elective for the proposed PhD in Forensic Science. The MSFS program is accredited by the Forensic Science Education Programs Accreditation Commission (FEPAC). Accreditation standards require us to provide advanced discipline-specific electives. The Advanced Forensic Chemistry course satisfies this requirement and has been offered successfully in the past as FORS 6394 (Special Topics in Forensic Science).
   b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc.
      Existing faculty have the expertise to teach this course and have been teaching it as a special topics course. No additional faculty are required and faculty assignments can be modified to accommodate the new course. The course is proposed as an elective and will not influence degree requirements.
   c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses.
      There are no courses offered currently with similar titles or content. FORS 5335 - Trace Evidence and Microscopic Analysis has related (fundamental) scientific content and is a prerequisite for the advanced level course proposed here. The existing FORS 535 (Trace Evidence and Microscopic Analysis) and proposed FORS 6335 (Advanced Forensic Chemistry) courses will be instructed by the same faculty member.
   d. Identify who is likely to be the instructor(s) of this course.
      The instructor will be Jorn Yu., PhD., Assistant Professor of Forensic Science.

III. Course Content
a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).

Upon completion of this course, the student will be able to:
1. List advanced chemical analysis techniques for physical evidence examination. For example, isotope ratio mass spectrometry, and ambient pressure mass spectrometry for the detection and analysis of physical evidence.
2. Explain the current state of knowledge and future development in forensic chemistry.
3. Describe scientific interpretation of physical evidence with an emphasis of its transfer property.
4. Apply advanced techniques in physical evidence discovery and examination. For example, remote sensing, X-ray fluorescence spectrometry, IR imaging, and evidence mapping for the discovery of evidence at a crime scene.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). If the text is more than 5 years old, please provide a justification.

<table>
<thead>
<tr>
<th>Author</th>
<th>Title And Publisher</th>
<th>Year</th>
</tr>
</thead>
</table>

(c. Using a 15-week class schedule, identify the topics to be covered during each week of the semester:

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Introduction to Advanced Forensic Chemistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2</td>
<td>Advanced Crime Scene Chemistry I</td>
</tr>
<tr>
<td>Week 3</td>
<td>Advanced Crime Scene Chemistry II</td>
</tr>
<tr>
<td>Week 4</td>
<td>Optical Technique for Physical Evidence Sensing and Imaging</td>
</tr>
<tr>
<td>Week 5</td>
<td>Remote sensing and IR remote sensing</td>
</tr>
<tr>
<td>Week 6</td>
<td>Advanced Crime Lab Chemistry</td>
</tr>
<tr>
<td>Week 7</td>
<td>Forensic Applications of UPLC-Tandem Mass Spectrometry</td>
</tr>
<tr>
<td>Week 8</td>
<td>Ambient Pressure Mass Spectrometer</td>
</tr>
<tr>
<td>Week 9</td>
<td>Isotope Ratio Spectrometer</td>
</tr>
<tr>
<td>Week 10</td>
<td>Microfluidics for Physical Evidence Examination</td>
</tr>
<tr>
<td>Week 11</td>
<td>Pyrolysis-GC/MS for Physical Evidence Examination</td>
</tr>
<tr>
<td>Week 12</td>
<td>Ion Mobility Spectroscopy (IMS) for Screening Trace Evidence</td>
</tr>
<tr>
<td>Week 13</td>
<td>Micro-FT-IR for Physical Evidence Examination</td>
</tr>
<tr>
<td>Week 14</td>
<td>Micro-Raman Spectroscopy for Physical Evidence Examination</td>
</tr>
<tr>
<td>Week 15</td>
<td>Forensic Applications of Machine Learning Algorithm</td>
</tr>
</tbody>
</table>

IV. Library materials required for this course. This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

a. Please indicate the types of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the extent of use anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

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<tr>
<td>Scholarly, Peer-Reviewed Journals</td>
<td>7</td>
</tr>
<tr>
<td>Electronic Databases</td>
<td>7</td>
</tr>
<tr>
<td>Books</td>
<td>1</td>
</tr>
<tr>
<td>Trade Journals</td>
<td>0</td>
</tr>
</tbody>
</table>
b. Please identify specific resources that the Library needs to acquire in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc. Please identify new titles that should be acquired or subject areas in the collection that may need to be enhanced or updated.

New titles needed or subject area to be enhanced:
None.

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.
No additional equipment is needed for this course.

After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.
FORM B
—CHECK LIST—
Please check each box to verify review.

Overall
☒ The version of Form B currently posted on the Academic Affairs web site under Curriculum Forms is being used.
☒ Font is Times New Roman, 11 pt, no bold, no “all caps.”
☒ The form has been proofed for spelling and grammar errors. Please note that the Form B template does not have grammar and spell check.
☒ Every question has a response. If there is not an affirmative response, use “N/A,” “No,” or “None” as appropriate.

Part I - V
☒ I.c. The catalog description is in complete sentences.
☒ Course catalog descriptions should be understandable to members outside the discipline. Avoid acronyms, abbreviations and terminology specific to the discipline not usually recognized by the general public. Commonly recognized terminology is acceptable, e.g., NASA, DNA, S Corporation.
☒ The final sentence of the catalog description lists any prerequisites, followed by credits, e.g., Prerequisite: IT 161. Credit 3.
☒ Use terms such as “basic,” “fundamental,” “introduction,” and “overview” sparingly. Upper division courses should seldom be introductory.
☒ I.d. Companion courses require concurrent enrollment. This is a rare occurrence. If applicable, the companion course should be listed in the course description.
☒ I.i. If the course is proposed to be writing enhanced, course requirements listed in the 15-week class schedule should reflect writing assignments.
☒ II.b. There is nearly always an impact if a new course is added. Adding a new course may require that new faculty be hired or existing teaching assignments be modified, existing courses be deleted, or degree requirements be modified. Offer specific explanation of the modifications.
☒ II.c. Review SHSU course offerings to identify courses with similar titles or content. Err in favor of listing courses that potentially could overlap. Include documentation of discussions with appropriate departmental chairs to avoid duplication.
☒ III.b. Note that the form requires both Title and Publisher. Do not omit the publisher.
☐ Provide a justification if the proposed texts are more than five years old. Check to see if proposed textbooks over two years old are out-of-print.
☒ III.c. If the course features differential content or directed study, provide a sample 15-week class schedule.
☒ IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Sarah Kerrigan  9/14/2012
Department Chair Signature  Date  College Curriculum Committee Chair Signature  Date
LIBRARY COLLECTION REVIEW for PROPOSED COURSE

Proposed Course Prefix and Number: FORS 6335
Proposed Title: Advanced Forensic Chemistry

1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses covering related content as the proposed course, including: FORS 5335 - Trace Evidence & Microscopic Analysis, CHEM 5368 - Analytical Spectroscopy, and CHEM 5372 - Advanced Biochemistry.

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. The most relevant electronic books are provided by CRCNetbase (contains titles such as Advances in Forensic Applications of Mass Spectrometry, Forensic Human Identification: An Introduction, Advances in Isotope Methods for the Analysis of Trace Elements, Machine Learning Forensics for Law Enforcement, Security & Intelligence, and Forensic Examination of Fibres). Additional electronic books can be found in Ebsco ebooks and ebrary.

The Library’s print collection includes items on Mass Spectrometry, Isotopes, Microfluidics, Pyrolysis, Ion Mobility Spectroscopy, Crime Laboratories, Trace Analysis, Chemistry - Forensic, and Chemistry - Analytic.


Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

None requested. Listed textbook is available in the Library collection.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed: Susan Strickland
Bibliographer
Date: 11 September 2012

Signed: Ann H. Holder
Library Director
Date: 9/17/12
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:
Proposed Title:

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: ___________________________ Date: ____________________
Writing Enhanced Committee Chair
FORM B
REQUEST FOR ADDITION OF A NEW COURSE

I. Course Identification
   a. Proposed prefix and number: FORS 6346
   b. Proposed title (30 Character Max): Advanced Forensic Toxicology
   c. Proposed catalog description including prerequisites and credit: This course will focus on advanced principles and practices in forensic toxicology, in particular advanced analytical, methodological and interpretive issues. Students will apply their knowledge of basic forensic toxicology principles to a variety of analytical and interpretive topics relevant to behavioral and postmortem toxicology including but not limited to impaired driving, sexual assault and death investigation. Prerequisite: FORS 5446. Credit 3.
   d. Companion course/Co-requisite: No
   e. May course be repeated for credit? No
   f. Maximum number of credit hours that can be earned: 3
   g. Is course eligible to receive a grade of IP? No If yes, justification:
   h. Is this course exempt from the 3-peat charge? No; If yes, justification:
   i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) N/A; if yes, attach Writing Enhancement Supplement.
   j. Identify the majors and/or minors for which this course will be required: None
   k. Identify the majors and/or minors for which this course may be an elective: MS in Forensic Science, PhD in Forensic Science, MS in Chemistry.

II. Statement of Need and Program Compatibility
   a. Justify the need for this course, including how the proposed course will support the present program curriculum.
      This course was offered previously as a special topics course (elective) for the Master of Science in Forensic Science (MSFS). The course is required to support the growing enrollment in the forensic science program and in particular, student interest in the discipline of forensic toxicology. Approximately one third of all MSFS graduates currently find employment in the field of forensic toxicology. This course will also serve as an elective for the proposed PhD in Forensic Science. The MSFS program is accredited by the Forensic Science Education Programs Accreditation Commission (FEPAC). Accreditation standards require us to provide advanced discipline-specific electives. The Advanced Forensic Toxicology course satisfies this requirement and will complement existing research and external funding in the area of forensic toxicology at SHSU.
   b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc.
      Existing faculty have the expertise to teach this course and have taught it in the past. No additional faculty are required and faculty assignments can be modified to accommodate the new course. The course is proposed as an elective and will not influence degree requirements.
   c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses.
      There are no courses offered currently with similar titles or content. FORS 5446 - Forensic Toxicology has related (fundamental) scientific content and is a prerequisite for the advanced level course proposed here. The existing FORS 5446 (Forensic Toxicology) and proposed FORS 6346 (Advanced Forensic Toxicology) courses will be instructed by the same faculty member.
   d. Identify who is likely to be the instructor(s) of this course.
      The instructor will be Sarah Kerrigan, PhD., Professor and Chair of Forensic Science.

III. Course Content
a. List the course objectives as expected student outcomes. Objectives should be specific, measurable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).

Upon completion of this course, the student will be able to:
1. Apply fundamental toxicological principles and knowledge of drugs and poisons to solve problems and develop an understanding of interpretive toxicology.
2. Demonstrate problem solving abilities, critical thinking and quantitative analysis.
3. Optimize and perform a scientific validation on a toxicological method.
4. Further develop understanding of quality assurance and regulatory requirements in the major forensic toxicology disciplines.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). If the text is more than 5 years old, please provide a justification.

<table>
<thead>
<tr>
<th>Author</th>
<th>Title And Publisher</th>
<th>Year</th>
</tr>
</thead>
</table>

(c. Using a 15-week class schedule, identify the topics to be covered during each week of the semester:

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Introduction to interpretive toxicology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2</td>
<td>Human performance toxicology - impairs drugs</td>
</tr>
<tr>
<td>Week 3</td>
<td>Drug facilitated sexual assault</td>
</tr>
<tr>
<td>Week 4</td>
<td>Drug impaired driving</td>
</tr>
<tr>
<td>Week 5</td>
<td>Postmortem forensic toxicology</td>
</tr>
<tr>
<td>Week 6</td>
<td>Standards and regulatory considerations - focus on the Scientific Working Group on Toxicology (SWGTOX)</td>
</tr>
<tr>
<td>Week 7</td>
<td>Accreditation and certification requirements in toxicology</td>
</tr>
<tr>
<td>Week 8</td>
<td>Method development requirements</td>
</tr>
<tr>
<td>Week 9</td>
<td>Application of method development in practice</td>
</tr>
<tr>
<td>Week 10</td>
<td>Method validation requirements in accordance with SWGTOX</td>
</tr>
<tr>
<td>Week 11</td>
<td>Application of validation protocols in practice</td>
</tr>
<tr>
<td>Week 12</td>
<td>Measurement uncertainty in forensic toxicology</td>
</tr>
<tr>
<td>Week 13</td>
<td>Quality assurance and quality control issues specific to toxicology</td>
</tr>
<tr>
<td>Week 14</td>
<td>Expert testimony in forensic toxicology</td>
</tr>
<tr>
<td>Week 15</td>
<td>Ethical issues, litigation and criminal justice consequences</td>
</tr>
</tbody>
</table>

IV. Library materials required for this course. This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

a. Please indicate the types of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the extent of use anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

<table>
<thead>
<tr>
<th>Types of print/electronic library resources needed</th>
<th>Extent of use anticipated (on a scale of 0 to 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholarly, Peer-Reviewed Journals</td>
<td>7</td>
</tr>
<tr>
<td>Electronic Databases</td>
<td>7</td>
</tr>
<tr>
<td>Books</td>
<td>3</td>
</tr>
<tr>
<td>Trade Journals</td>
<td>0</td>
</tr>
<tr>
<td>Newspapers</td>
<td>0</td>
</tr>
</tbody>
</table>
b. Please identify **specific** resources that the Library needs to **acquire** in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc. Please identify **new titles** that should be acquired or **subject areas** in the collection that may need to be **enhanced** or **updated**.

**New titles needed or subject area to be enhanced:**
None.

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.
No additional equipment is needed for this course.

**After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.**
FORM B

—CHECK LIST—

Please check each box to verify review.

Overall

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Part I - V

☒ I.c. The catalog description is in complete sentences.
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☒ I.d. Companion courses require concurrent enrollment. This is a rare occurrence. If applicable, the companion course should be listed in the course description.

☒ I.i. If the course is proposed to be writing enhanced, course requirements listed in the 15-week class schedule should reflect writing assignments.

☒ II.b. There is nearly always an impact if a new course is added. Adding a new course may require that new faculty be hired or existing teaching assignments be modified, existing courses be deleted, or degree requirements be modified. Offer specific explanation of the modifications.

☒ II.c. Review SHSU course offerings to identify courses with similar titles or content. Err in favor of listing courses that potentially could overlap. Include documentation of discussions with appropriate departmental chairs to avoid duplication.

☒ III.b. Note that the form requires both Title and Publisher. Do not omit the publisher.

Provide a justification if the proposed texts are more than five years old. Check to see if proposed textbooks over two years old are out-of-print.

☒ III.c. If the course features differential content or directed study, provide a sample 15-week class schedule.

☒ IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Sarah Kerrigan  9/14/2012
Department Chair Signature  Date  College Curriculum Committee Chair Signature  Date
LIBRARY COLLECTION REVIEW for PROPOSED COURSE

Proposed Course Prefix and Number: FORS 6346
Proposed Title: Advanced Forensic Toxicology

1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses covering related content as the proposed course, including: FORS 5346 - Forensic Toxicology and CHM 546 - Forensic Toxicology & Drug Chemistry.

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. The most relevant electronic books are provided by CRCNetbase (contains titles such as Analytical & Practical Aspects of Drug Testing in Hair, Postmortem Toxicology of Abused Drugs, Toxicology: A Case-Oriented Approach, Forensic Toxicology: Medico-Legal Case Studies, Instrumental Data for Drug Analysis, and Workplace Drug Testing). Additional electronic books can be found in Ebsco ebooks and ebrary.

The Library’s print collection includes items on Toxicology, Designer Drugs, Rape Investigation, Drinking & Traffic Accidents, Drugged Driving, Autopsy, Toxicological Chemistry, Evidence – Expert, Evidence – Criminal, Crime Laboratories, and Scientists - Professional Ethics.

Citations for peer reviewed articles are available through an interdisciplinary mix of databases such as Science Direct, American Chemical Society Publications Database, Web of Science, MEDLINE, and SciFinder Scholar. Some of the indicated databases provide full text of journals articles, including: Toxicology International, Chemical Research in Toxicology, Clinical Toxicology, Forensic Toxicology, Journal of Analytical Toxicology, Journal of Applied Toxicology, Particle & Fibre Toxicology, Toxicologic Pathology, Toxicological Sciences, and Toxins.

Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

None requested. The Library owns the textbook listed.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed: Susan Strickland ____________________________ Date: 11 September 2012
Bibliographer

Signed: Ann H. Holder ____________________________ Date: 9/17/12
Library Director
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:
Proposed Title:

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: _______________________________ Date: _______________________________
Writing Enhanced Committee Chair
FORM B
REQUEST FOR ADDITION OF A NEW COURSE

I. Course Identification
a. Proposed prefix and number: FORS 7331
b. Proposed title (30 Character Max): Research Methods
c. Proposed catalog description including prerequisites and credit: This course focuses on the scientific method, research methods and design. The course provides students the opportunity to discover, structure, and formulate research questions. Through this process students come to understand the many ways in which researchers can acquire knowledge and insights using a wide variety of research methods applicable to forensic science. Prerequisite: Three credits of statistics. Credit 3.

d. Companion course/Co-requisite: No
e. May course be repeated for credit? No
f. Maximum number of credit hours that can be earned: 3
g. Is course eligible to receive a grade of IP? No If yes, justification:
h. Is this course exempt from the 3-peat charge? No; If yes, justification:
i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) N/A; if yes, attach Writing Enhancement Supplement.
j. Identify the majors and/or minors for which this course will be required: PhD in Forensic Science
k. Identify the majors and/or minors for which this course may be an elective: MS in Forensic Science, MS in Chemistry, MS in Biology

II. Statement of Need and Program Compatibility
a. Justify the need for this course, including how the proposed course will support the present program curriculum.
This course will be required for the PhD in Forensic Science. Doctoral students within the program are expected to engage in scholarly inquiry and scientific research. An understanding of the fundamental basis of research methods, design and evaluation is necessary in order for students to be successful.

b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc.
This is a required course for the proposed PhD in Forensic Science and as such, is a critical component of the overall degree requirements. Current faculty have the expertise to teach this course. However, if the Forensic Science Doctoral program is approved, new faculty will be hired to meet the increased need associated with the program.

c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses.
Other offerings on research methods are based in social science or criminal justice. The PhD in Forensic Science is an interdisciplinary program rooted in the natural sciences. Students within the program are laboratory scientists who are expected to advance into leadership positions. This course will focus on the scientific method and research methods and design from the standpoint of laboratory-based experimental research. No other course offerings satisfy the specialized course content that is required.

d. Identify who is likely to be the instructor(s) of this course.
The instructor will be Dr. Jorn Yu, Associate Professor of Forensic Science.

III. Course Content
a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).
Upon completion of this course, the student will be able to:
1. Describe and apply the scientific method.
2. Explain the basis of research ethics, informed consent and regulatory aspects of scientific research.
3. Critically evaluate and synthesize research from the scientific literature.
4. Identify and critically evaluate basic components of a research proposal.
5. Understand and apply methods used to analyze qualitative and quantitative data.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). \textbf{If the text is more than 5 years old, please provide a justification.}

<table>
<thead>
<tr>
<th>Author</th>
<th>Title And Publisher</th>
<th>Year</th>
</tr>
</thead>
</table>

c. Using a 15-week class schedule, identify the topics to be covered during each week of the semester:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction to the scientific method</td>
</tr>
<tr>
<td>Week 2</td>
<td>History of research ethics, informed consent and compliance with federal and institutional regulations</td>
</tr>
<tr>
<td>Week 3</td>
<td>Hypothesis testing</td>
</tr>
<tr>
<td>Week 4</td>
<td>Logical reasoning, inductive and deuctive</td>
</tr>
<tr>
<td>Week 5</td>
<td>Developing a framework for research design including observational, pre-experimental and experimental designs</td>
</tr>
<tr>
<td>Week 6</td>
<td>Defining, measuring and manipulating variables</td>
</tr>
<tr>
<td>Week 7</td>
<td>Descriptive methods including observational, case study and qualitative methods</td>
</tr>
<tr>
<td>Week 8</td>
<td>Analysis of data: qualitative and quantitative</td>
</tr>
<tr>
<td>Week 9</td>
<td>Reliability, error and validity</td>
</tr>
<tr>
<td>Week 10</td>
<td>Data organization and descriptive statistics</td>
</tr>
<tr>
<td>Week 11</td>
<td>Correlation methods and statistics</td>
</tr>
<tr>
<td>Week 12</td>
<td>Data sampling techniques</td>
</tr>
<tr>
<td>Week 13</td>
<td>Modeling and prediction in laboratory based science</td>
</tr>
<tr>
<td>Week 14</td>
<td>Critical evaluation of forensic research proposals</td>
</tr>
<tr>
<td>Week 15</td>
<td>Critical evaluation of data in forensic science research</td>
</tr>
</tbody>
</table>

IV. \textbf{Library materials required for this course.} This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

a. Please indicate the \textbf{types} of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the \textbf{extent of use} anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

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<td>7</td>
</tr>
<tr>
<td>Books</td>
<td>3</td>
</tr>
<tr>
<td>Trade Journals</td>
<td>0</td>
</tr>
<tr>
<td>Newspapers</td>
<td>0</td>
</tr>
<tr>
<td>Popular Magazines</td>
<td>0</td>
</tr>
<tr>
<td>Audio-Visual</td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
</tr>
</tbody>
</table>
b. Please identify specific resources that the Library needs to acquire in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc.

Please identify new titles that should be acquired or subject areas in the collection that may need to be enhanced or updated.

**New titles needed or subject area to be enhanced:**
None. Existing resources are sufficient.

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.

No additional equipment is needed for this course.

After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.
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☐ IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Sarah Kerrigan  9/14/2012
Department Chair Signature  Date  College Curriculum Committee Chair Signature  Date
Library Collection Review for Proposed Course

Proposed Course Prefix and Number: FORS 7331
Proposed Title: Research Methods

1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses covering related content as the proposed course, including CRIJ 6334 -- Research Methods & Quantitative Analysis in Criminal Justice, CRIJ 6385 -- Statistics for Criminal Justice Research, CRIJ 7434 -- Advanced Statistics I, CRIJ 7387 -- Research Design, CRIJ 7389 -- Advanced Statistics II, CRIJ 7393 -- Computer Based Data Analysis, and CRIJ 6387 -- The Ethics of Criminal Justice.

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. The most relevant electronic books are provided by CRCNetbase (Ethics & the Practice of Forensic Science, Principles & Practice of Criminalistics: The Profession of Forensic Science, and Scientific Method: Applications in Failure Investigation & Forensic Science). Additional electronic books can be found in Ebsco ebooks and ebrary.

The Library’s print collection includes items on Science -- Methodology, Methodology, Experimental Design, Science--Statistical Methods, Biometry, Chemometrics, and Chemistry--Statistical Methods.

Citations for peer reviewed articles are available through an interdisciplinary mix of databases such as Science Direct, American Chemical Society Publications Database, Web of Science, MEDLINE, and SciFinder Scholar. Some of the indicated databases provide full text of journals articles, from key forensic science journals including Journal of Forensic Sciences, Forensic Science International, and Science & Justice.

Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

None requested or identified.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed: Susan Strickland
Date: 17 September 2012
Bibliographer

Signed: Ann H. Holder
Date: 9/17/12
Library Director
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:
Proposed Title:

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: ____________________________ Date: ____________________________
Writing Enhanced Committee Chair
I. Course Identification
   a. Proposed prefix and number: FORS 7332
   b. Proposed title (30 Character Max): Scientific Communications
   c. Proposed catalog description including prerequisites and credit: This course develops oral and written communication skills necessary for forensic science researchers and practitioners. Students must develop mastery of the following: technical report writing with regard to standard operating procedures, scientific publications and grant proposals; oral presentations, depositions and courtroom testimony of scientific evidence. Prerequisite: FORS 5226. Credit 3.
   d. Companion course/Co-requisite: No
   e. May course be repeated for credit? No
   f. Maximum number of credit hours that can be earned: 3
   g. Is course eligible to receive a grade of IP? No If yes, justification:
   h. Is this course exempt from the 3-peat charge? No; If yes, justification:
   i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) N/A; if yes, attach Writing Enhancement Supplement.
   j. Identify the majors and/or minors for which this course will be required: PhD in Forensic Science
   k. Identify the majors and/or minors for which this course may be an elective: MS in Forensic Science

II. Statement of Need and Program Compatibility
   a. Justify the need for this course, including how the proposed course will support the present program curriculum. This course will be required for the PhD in Forensic Science. Doctoral students within the program must develop oral and written communication skills necessary to write and publish scientific papers in peer reviewed journals, present papers at scientific conferences, defend a thesis and present scientific testimony in a court of law. The doctoral-level course proposed here focuses on topics that apply to most scientific disciplines (technical report writing, scientific publications and grant proposals), but also those that are quite specific for forensic scientists (standard operating procedures in accordance with ISO (International Organization for Standardization) accreditation and presentation of scientific testimony in legal proceedings).
   b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc. This is a required course for the proposed PhD in Forensic Science and as such, is a critical component of the overall degree requirements. Current faculty have the expertise to teach this course. However, if the Forensic Science Doctoral program is approved, new faculty will be hired to meet the increased need associated with the program.
   c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses. There are no doctoral-level course offerings that focus on scientific communications. The Biological Science Department offers BIOL 5200 (Professional Aspects of Science), a Master's level course covering the professional and ethical responsibilities of scientists.
   d. Identify who is likely to be the instructor(s) of this course. The instructor will be Sarah Kerrigan, Ph.D., Professor and Chair, Forensic Science (or a faculty member yet to be hired).

III. Course Content
   a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”). Upon completion of this course, the student will be able to:
1. Develop strategies for the presentation of highly technical scientific information to a variety of scientific and non-scientific audiences.
2. Demonstrate excellence in technical writing.
3. Develop and critically evaluate written and oral research proposals.
4. Demonstrate oral presentation skills.
5. Synthesize oral presentation skills for effective communication of scientific information in legal proceedings.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). **If the text is more than 5 years old, please provide a justification.**

<table>
<thead>
<tr>
<th>Author</th>
<th>Title And Publisher</th>
<th>Year</th>
</tr>
</thead>
</table>

b. Using a 15-week class schedule, identify the topics to be covered during each week of the semester:

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Challenges to scientific communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2</td>
<td>Oral presentation skills - preparation, organization, content, vocabulary, delivery, body language, questions and answers (theory and skills)</td>
</tr>
<tr>
<td>Week 3</td>
<td>Oral presentation skills - preparation, organization, content, vocabulary, delivery, body language, questions and answers (demonstration)</td>
</tr>
<tr>
<td>Week 4</td>
<td>Presentation of scientific evidence in court - strategies for improvement</td>
</tr>
<tr>
<td>Week 5</td>
<td>Principles of scientific writing (words, technical sentences, grammar, organization, graphics, references)</td>
</tr>
<tr>
<td>Week 6</td>
<td>Process of scientific writing (planning, drafts, reviews and editing, critical evaluation)</td>
</tr>
<tr>
<td>Week 7</td>
<td>Manuscripts - research papers, technical reports and review articles</td>
</tr>
<tr>
<td>Week 8</td>
<td>Grant proposals (proposal writing, preproposals, letters of enquiry, abstract, aims, objectives, budget)</td>
</tr>
<tr>
<td>Week 9</td>
<td>Standard operating procedure writing in accordance with ISO/IEC 17025: 2005</td>
</tr>
<tr>
<td>Week 10</td>
<td>Conference presentations (posters, oral presentations)</td>
</tr>
<tr>
<td>Week 11</td>
<td>Technical documents critical to laboratory accreditation</td>
</tr>
<tr>
<td>Week 12</td>
<td>Media communications</td>
</tr>
<tr>
<td>Week 13</td>
<td>Employment applications, interview techniques</td>
</tr>
<tr>
<td>Week 14</td>
<td>Mock presentation of a scientific paper for the American Academy of Forensic Sciences</td>
</tr>
<tr>
<td>Week 15</td>
<td>Moot court - direct and cross examination</td>
</tr>
</tbody>
</table>

IV. **Library materials required for this course.** This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

a. Please indicate the **types** of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the **extent of use** anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

<table>
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<th>Types of print/electronic library resources needed</th>
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<tbody>
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<td>7</td>
</tr>
<tr>
<td>Electronic Databases</td>
<td>7</td>
</tr>
<tr>
<td>Books</td>
<td>3</td>
</tr>
<tr>
<td>Trade Journals</td>
<td>0</td>
</tr>
<tr>
<td>Newspapers</td>
<td>0</td>
</tr>
</tbody>
</table>
b. Please identify specific resources that the Library needs to acquire in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc. Please identify new titles that should be acquired or subject areas in the collection that may need to be enhanced or updated.

**New titles needed or subject area to be enhanced:**
None. Existing resources are sufficient.

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.
No additional equipment is needed for this course.

*After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.*
FORM B
—CHECK LIST—

Please check each box to verify review.

Overall
☑ The version of Form B currently posted on the Academic Affairs web site under Curriculum Forms is being used.
☑ Font is Times New Roman, 11 pt, no bold, no “all caps.”
☑ The form has been proofed for spelling and grammar errors. Please note that the Form B template does not have grammar and spell check.
☑ Every question has a response. If there is not an affirmative response, use “N/A,” “No,” or “None” as appropriate.

Part I - V

I.c. The catalog description is in complete sentences.
☑ Course catalog descriptions should be understandable to members outside the discipline. Avoid acronyms, abbreviations and terminology specific to the discipline not usually recognized by the general public. Commonly recognized terminology is acceptable, e.g., NASA, DNA, S Corporation.
☑ The final sentence of the catalog description lists any prerequisites, followed by credits, e.g., Prerequisite: IT 161. Credit 3.
☑ Use terms such as “basic,” “fundamental,” “introduction,” and “overview” sparingly. Upper division courses should seldom be introductory.

I.d. Companion courses require concurrent enrollment. This is a rare occurrence. If applicable, the companion course should be listed in the course description.

I.i. If the course is proposed to be writing enhanced, course requirements listed in the 15-week class schedule should reflect writing assignments.

II.b. There is nearly always an impact if a new course is added. Adding a new course may require that new faculty be hired or existing teaching assignments be modified, existing courses be deleted, or degree requirements be modified. Offer specific explanation of the modifications.

II.c. Review SHSU course offerings to identify courses with similar titles or content. Err in favor of listing courses that potentially could overlap. Include documentation of discussions with appropriate departmental chairs to avoid duplication.

III.b. Note that the form requires both Title and Publisher. Do not omit the publisher.
☑ Provide a justification if the proposed texts are more than five years old. Check to see if proposed textbooks over two years old are out-of-print.

III.c. If the course features differential content or directed study, provide a sample 15-week class schedule.

IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Sarah Kerrigan  9/14/2012
Department Chair Signature  Date  College Curriculum Committee Chair Signature  Date
LIBRARY COLLECTION REVIEW for PROPOSED COURSE

Proposed Course Prefix and Number: FORS 7332
Proposed Title: Scientific Communications

1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses covering related content as the proposed course, including BIOL 5200 -- Professional Aspects of Science, SOCI 5378 -- Techniques of Research Proposal Writing in the Social Sciences, and FORS 6114 -- Forensic Science Capstone Course.

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. The most relevant electronic books are provided by CRCNetbase (Feder's Succeeding as an Expert Witness, Forensic Evidence: Science & the Criminal Law, The Scientist or Engineer as an Expert Witness, Effective Expert Witnessing, Expert Witnessing & Scientific Testimony: Surviving in the Courtroom). Additional electronic books can be found in Ebsco ebooks and ebrary.


Citations for peer reviewed articles are available through an interdisciplinary mix of databases such as Science Direct, American Chemical Society Publications Database, Web of Science, MEDLINE, and SciFinder Scholar. Some of the indicated databases provide full text of journals articles, from key forensic science journals including Journal of Forensic Sciences, Forensic Science International, and Science & Justice.

Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

None requested or identified. The Library owns the listed required textbook.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed: Susan Strickland ____________________________ Date: 17 September 2012
Bibliographer

Signed: Ann H. Holder ____________________________ Date: 9/17/12
Library Director
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:
Proposed Title:

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: _______________________________ Date: __________________
Writing Enhanced Committee Chair
FORM B
REQUEST FOR ADDITION OF A NEW COURSE

I. Course Identification
   a. Proposed prefix and number: FORS 7334
   b. Proposed title (30 Character Max): Social Science of Forensics
   c. Proposed catalog description including prerequisites and credit: This course addresses the nexus between social and behavioral principles and the conduct of forensic science. Topics addressed include the organization of the forensic enterprise including the structure and functioning of forensic crime labs; performance assessment of forensic systems, organizations and practitioners; sociological, social-psychological, and psychological factors affecting the performance of forensic practitioners; and management theory of forensic workplaces and workers. Credit 3.
   d. Companion course/Co-requisite: N
   e. May course be repeated for credit? No
   f. Maximum number of credit hours that can be earned: 3
   g. Is course eligible to receive a grade of IP? No If yes, justification:
   h. Is this course exempt from the 3-peat charge? No; If yes, justification:
   i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) No ; if yes, attach Writing Enhancement Supplement.
   j. Identify the majors and/or minors for which this course will be required: None
   k. Identify the majors and/or minors for which this course may be an elective: PhD in Forensic Science, MS in Forensic Science, MS in Criminal Justice, MA in Criminal Justice, PhD in Criminal Justice.

II. Statement of Need and Program Compatibility
   a. Justify the need for this course, including how the proposed course will support the present program curriculum.
      This new course is proposed as an elective in support of the PhD in Forensic Science. Just as forensic scientists must understand the law-science interface, knowledge of social science research about forensic science related issues is critical for effective management and leadership within a forensic laboratory.
   b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc.
      Current faculty have the expertise to teach this course. No additional faculty are required and faculty assignments can be modified to accommodate the new course by adding this course to the rotation of electives. However, if the Forensic Science Doctoral program is approved, new faculty will be hired to meet the increased need associated with the program. The course is proposed as an elective and will not influence degree requirements.
   c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses.
      This is the only course that will address social science issues related to forensic science.
   d. Identify who is likely to be the instructor(s) of this course.
      The instructor for this course will be Dr. William R. King, an Associate Professor of Criminal Justice, or a new faculty member yet to be hired.

III. Course Content
   a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).
      Upon completion of this course, the student will be able to:
      1. Describe the organizational landscape of forensic evidence processing in the US.
      2. Explain the methods for assessing the performance of forensic evidence processing.
3. Discuss the research related to decision-making, identification, and accuracy of analysis in forensic processing.
4. Review and apply the research on organizational theory, structure, and management to forensic processing systems and organizations.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). **If the text is more than 5 years old, please provide a justification.**

<table>
<thead>
<tr>
<th>Author</th>
<th>Title And Publisher</th>
<th>Year</th>
</tr>
</thead>
</table>

IV. Library materials required for this course. This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

a. Please indicate the types of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the **extent of use** anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

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<td>7</td>
</tr>
<tr>
<td>Electronic Databases</td>
<td>7</td>
</tr>
<tr>
<td>Books</td>
<td>2</td>
</tr>
<tr>
<td>Trade Journals</td>
<td>0</td>
</tr>
<tr>
<td>Newspapers</td>
<td>0</td>
</tr>
<tr>
<td>Popular Magazines</td>
<td>0</td>
</tr>
<tr>
<td>Audio-Visual</td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
</tr>
</tbody>
</table>

b. Please identify **specific** resources that the Library needs to acquire in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc.
Please identify **new titles** that should be acquired or **subject areas** in the collection that may need to be **enhanced** or **updated**.

**New titles needed or subject area to be enhanced:**
None

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software, or other physical resources not generally available on campus.


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**After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.**
FORM B
—CHECK LIST—
Please check each box to verify review.

Overall
☒ The version of Form B currently posted on the Academic Affairs web site under Curriculum Forms is being used.
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☒ The form has been proofed for spelling and grammar errors. Please note that the Form B template does not have grammar and spell check.
☒ Every question has a response. If there is not an affirmative response, use “N/A,” “No,” or “None” as appropriate.

Part I - V
☒ I.c. The catalog description is in complete sentences.
☐ Course catalog descriptions should be understandable to members outside the discipline. Avoid acronyms, abbreviations and terminology specific to the discipline not usually recognized by the general public. Commonly recognized terminology is acceptable, e.g., NASA, DNA, S Corporation.
☒ The final sentence of the catalog description lists any prerequisites, followed by credits, e.g., Prerequisite: IT 161. Credit 3.
☒ Use terms such as “basic,” “fundamental,” “introduction,” and “overview” sparingly. Upper division courses should seldom be introductory.
☒ I.d. Companion courses require concurrent enrollment. This is a rare occurrence. If applicable, the companion course should be listed in the course description.
☒ I.i. If the course is proposed to be writing enhanced, course requirements listed in the 15-week class schedule should reflect writing assignments.
☒ II.b. There is nearly always an impact if a new course is added. Adding a new course may require that new faculty be hired or existing teaching assignments be modified, existing courses be deleted, or degree requirements be modified. Offer specific explanation of the modifications.
☒ II.c. Review SHSU course offerings to identify courses with similar titles or content. Err in favor of listing courses that potentially could overlap. Include documentation of discussions with appropriate departmental chairs to avoid duplication.
☒ III.b. Note that the form requires both Title and Publisher. Do not omit the publisher.
☐ Provide a justification if the proposed texts are more than five years old. Check to see if proposed textbooks over two years old are out-of-print.
☒ III.c. If the course features differential content or directed study, provide a sample 15-week class schedule.
☒ IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Sarah Kerrigan  9/14/2012
Department Chair Signature  Date  College Curriculum Committee Chair Signature  Date
1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses covering related content as the proposed course, including: BIOL 5200 -- Professional Aspects of Science, SOC 5322 Seminar in Medical Sociology, CRIJ 6332 -- Resource Development in the Organizational Context, CRIJ 6333 -- Seminar in Organization & Administration, and CRIJ 6335 -- Seminar in Leadership and Management.

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. The most relevant electronic books are provided by CRCNetbase (contains titles such as Criminal Investigative Failures, Ethics & the Practice of Forensic Science, Ethics in Forensic Science: Professional Standards for the Practice of Criminalistics, Quality Assurance in the Pathology Laboratory: Forensic, Technical, & Ethical Aspects, and Ensuring Competent Performance in Forensic Practice: Recovery, Analysis, Interpretation, & Reporting). Additional electronic books can be found in Ebsco ebooks and ebrary.

The Library’s print collection includes items on Forensic Sciences -- Moral & Ethical Aspects, Forensic Scientists -- Professional Ethics, Crime Laboratories, Pathological Laboratories, and Science -- Social Aspects.


Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

None requested.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed: Susan Strickland 
Bibliographer 
Date: 15 September 2012

Signed: Ann H. Holder 
Library Director 
Date: 9/17/12
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:  
Proposed Title:  

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: ___________________________ Date: ___________________________

Writing Enhanced Committee Chair
I. **Course Identification**
   a. Proposed prefix and number: FORS 7381
   b. Proposed title (30 Character Max): Explosive Analysis & Detection
   c. Proposed catalog description including prerequisites and credit: This course surveys the broad field of explosive engineering and detection to include the safety and transportation classifications. Chemical and physical properties, explosive reagents and byproducts and detection techniques are addressed. It includes military and improvised devices, post-blast evidence and constitutional aspects of interdiction.
      Prerequisite: CHEM 4440 or FORS 5445. Credit 3.
   d. Companion course/Co-requisite: No
   e. May course be repeated for credit? No
   f. Maximum number of credit hours that can be earned: 3
   g. Is course eligible to receive a grade of IP? No
   h. Is this course exempt from the 3-peat charge? No
   i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) N/A; if yes, attach Writing Enhancement Supplement.
   j. Identify the majors and/or minors for which this course will be required: None
   k. Identify the majors and/or minors for which this course may be an elective: PhD in Forensic Science, MS in Chemistry, MS in Forensic Science

II. **Statement of Need and Program Compatibility**
   a. Justify the need for this course, including how the proposed course will support the present program curriculum.
      This course is proposed as an elective for the PhD in Forensic Science. The PhD program in Forensic Science is an interdisciplinary program rooted in the natural sciences. Advanced discipline-specific electives are required in chemistry, biochemistry and biology to support this program. The Explosive Analysis and Detection course will satisfy this requirement as an advanced chemistry elective. Not only is the topic highly applicable to forensic science but it also receives widespread attention in light of the focus on homeland security issues. The course will also complement existing research, external funding and other activities at SHSU in the area of explosives.
   b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc.
      Current faculty have the expertise to teach this course. No additional faculty are required and faculty assignments can be modified to accommodate the new course by adding this course to the rotation of electives. However, if the Forensic Science Doctoral program is approved, new faculty will be hired to meet the increased need associated with the program. The course is proposed as an elective and will not influence degree requirements.
   c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses.
      No other courses in the Departments of Chemistry or Forensic Science resemble the course proposed here.
   d. Identify who is likely to be the instructor(s) of this course.
      The instructor will be Dr. Darren Williams, Associate Professor of Chemistry.

III. **Course Content**
   a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).
      Upon completion of this course, the student will be able to:
1. Distinguish between safe and unsafe methods of transportation, handling, and storage of energetic materials.
2. Relate the energetic properties to the physical and chemical properties of explosives.
3. Describe and select appropriate techniques for a variety of detection scenarios.
4. Contrast the challenges posed by improvised versus commercial and military explosive devices.
5. Explore the constitutional challenges related to the interdiction of unauthorized use of explosives.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). **If the text is more than 5 years old, please provide a justification.**

<table>
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<td>Books</td>
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</tr>
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<td>Audio-Visual</td>
<td>0</td>
</tr>
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<td>Internet resources will be used extensively.</td>
</tr>
</tbody>
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b. Please identify specific resources that the Library needs to acquire in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc. Please identify new titles that should be acquired or subject areas in the collection that may need to be enhanced or updated.

New titles needed or subject area to be enhanced:

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.
No additional equipment is needed for this course.

After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.
FORM B
—CHECK LIST—

Please check each box to verify review.

Overall
☒ The version of Form B currently posted on the Academic Affairs web site under Curriculum Forms is being used.
☒ Font is Times New Roman, 11 pt, no bold, no “all caps.”
☒ The form has been proofed for spelling and grammar errors. Please note that the Form B template does not have grammar and spell check.
☒ Every question has a response. If there is not an affirmative response, use “N/A,” “No,” or “None” as appropriate.

Part I - V
☒ I.c. The catalog description is in complete sentences.
 ☒ Course catalog descriptions should be understandable to members outside the discipline. Avoid acronyms, abbreviations and terminology specific to the discipline not usually recognized by the general public. Commonly recognized terminology is acceptable, e.g., NASA, DNA, S Corporation.
 ☒ The final sentence of the catalog description lists any prerequisites, followed by credits, e.g., Prerequisite: IT 161. Credit 3.
 ☒ Use terms such as “basic,” “fundamental,” “introduction,” and “overview” sparingly. Upper division courses should seldom be introductory.

☒ I.d. Companion courses require concurrent enrollment. This is a rare occurrence. If applicable, the companion course should be listed in the course description.

☒ I.i. If the course is proposed to be writing enhanced, course requirements listed in the 15-week class schedule should reflect writing assignments.

☒ II.b. There is nearly always an impact if a new course is added. Adding a new course may require that new faculty be hired or existing teaching assignments be modified, existing courses be deleted, or degree requirements be modified. Offer specific explanation of the modifications.

☒ II.c. Review SHSU course offerings to identify courses with similar titles or content. Err in favor of listing courses that potentially could overlap. Include documentation of discussions with appropriate departmental chairs to avoid duplication.

☒ III.b. Note that the form requires both Title and Publisher. Do not omit the publisher.

☐ Provide a justification if the proposed texts are more than five years old. Check to see if proposed textbooks over two years old are out-of-print.

☒ III.c. If the course features differential content or directed study, provide a sample 15-week class schedule.

☒ IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Sarah Kerrigan  9/14/2012
Department Chair Signature  Date  College Curriculum Committee Chair Signature  Date
LIBRARY COLLECTION REVIEW for PROPOSED COURSE

Proposed Course Prefix and Number: FORS 7381
Proposed Title: Explosive Analysis & Detection

1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses covering related content as the proposed course, including: FORS 5331 - Techniques for Crime Scene Investigation, FORS 5226 – Law & Forensic Science, and CHEM 5368 - Analytical Spectroscopy.

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. The most relevant electronic books are provided by CRCNetbase (contains titles such as Explosives & Chemical Weapons Identification, Practical Bomb Scene Investigation, and Forensic Investigation of Explosions). Additional electronic books can be found in Ebsco ebooks and ebrary.

The Library’s print collection includes items on explosives, bombs & bombing, improvised explosive devices, mines, mass spectrometry, mobility spectroscopy, colorimetry, and legal issues regarding search, seizure, surveillance & interdiction. Additionally, the Library’s Government Documents Collection contains many relevant items.

Citations for peer reviewed articles are available through an interdisciplinary mix of databases such as Index to Legal Periodicals, Lexis/Nexis, Science Direct, Westlaw, Wilson OmniFile Full Text, American Chemical Society Publications Database, Web of Science, MEDLINE, and SciFinder Scholar. Some of the indicated databases provide full text of journals articles, including: Journal of Hazardous Materials, Military Medicine, Safety Science, Applied Energy, Accident Analysis & Prevention, and Materials Chemistry & Physics. Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

The requested title "Forensic and Environmental Detection of Explosives" (Jehuda Yinon) is already in the Library print collection. The listed textbook is also in the collection.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed: Susan Strickland Bibliographer Date: 11 September 2012

Signed: Ann H. Holder Library Director Date: 9/17/12
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:
Proposed Title:

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: ___________________________ Date: ___________________________
Writing Enhanced Committee Chair
FORM B
REQUEST FOR ADDITION OF A NEW COURSE

I. Course Identification
   a. Proposed prefix and number: FORS 7385
   b. Proposed title (30 Character Max): Warfare Agents
   c. Proposed catalog description including prerequisites and credit: This course evaluates chemical, biological and radiological warfare agents. These agents are discussed from a chemical and biochemical standpoint including structure, function, mechanism of action, injury, clinical therapy, and recovery. Three credit hours of biochemistry or toxicology at the undergraduate or graduate level are recommended for students taking this course. Credit 3.
   d. Companion course/Co-requisite: No
   e. May course be repeated for credit? No
   f. Maximum number of credit hours that can be earned: 3
   g. Is course eligible to receive a grade of IP? No  If yes, justification:
   h. Is this course exempt from the 3-peat charge? No; If yes, justification:
   i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) N/A; if yes, attach Writing Enhancement Supplement.
   j. Identify the majors and/or minors for which this course will be required: None
   k. Identify the majors and/or minors for which this course may be an elective: PhD in Forensic Science, MS in Chemistry, MS in Forensic Science

II. Statement of Need and Program Compatibility
   a. Justify the need for this course, including how the proposed course will support the present program curriculum.
   This course is proposed as an elective for the PhD in Forensic Science. The PhD program in Forensic Science is an interdisciplinary program rooted in the natural sciences. Advanced discipline-specific electives are required in chemistry, biochemistry and biology to support this program. The Warfare Agents course will satisfy this requirement as an advanced biochemistry elective. Not only is the topic highly applicable to forensic science but it also receives widespread attention in light of the focus on homeland security issues. The course will also complement existing federally-funded research at SHSU in the area of warfare agents.
   b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc.
   Current faculty have the expertise to teach this course. No additional faculty are required and faculty assignments can be modified to accommodate the new course by adding this course to the rotation of electives. Moreover, if the Forensic Science Doctoral program is approved, new faculty will be hired to meet the increased need associated with the program.
   c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses.
   No other courses in the Departments of Chemistry or Forensic Science resemble the course proposed here.
   d. Identify who is likely to be the instructor(s) of this course.
   The instructor for this course will be Ilona Petrikovics, Ph.D., an Associate Professor of Chemistry.

III. Course Content
   a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).
   **Upon completion of this course, the student will be able to:**
   1. Explain fundamental principles, generalization, and classification of chemical, biological and radiological warfare agents (CBRWA).
2. Describe detection, function, mechanism of action and antagonism, injury, clinical therapy and recovery for CBRWA.
3. Apply theoretical concepts and techniques for CBRWA diagnostics and develop countermeasures.
4. Elaborate recent nation-wide research efforts on diagnostics and antidotal approaches for antagonizing CBRWA including cyanide and nerve agents.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). **If the text is more than 5 years old, please provide a justification.**

<table>
<thead>
<tr>
<th>Author</th>
<th>Title And Publisher</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al Mauroni</td>
<td>Chemical &amp; Biological Warfare. A Reference Handbook/ ABC-CLIO Inc. Although this handbook is more than five years old, it is the most current text on biological warfare.</td>
<td>2006</td>
</tr>
</tbody>
</table>

c. Using a 15-week class schedule, identify the topics to be covered during each week of the semester:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Significance of chemical, biological, radiological, or nuclear (CBRN) warfare agents</td>
</tr>
<tr>
<td>Week 2</td>
<td>Chemical Agents: including cyanides, nerve agents and toxic industrial chemicals</td>
</tr>
<tr>
<td>Week 3</td>
<td>Detection of chemical warfare agents</td>
</tr>
<tr>
<td>Week 4</td>
<td>Mechanistic aspects of chemical agents</td>
</tr>
<tr>
<td>Week 5</td>
<td>Toxicology, clinical therapy and recovery from chemical warfare agents</td>
</tr>
<tr>
<td>Week 6</td>
<td>Biological agents: including anthrax, botulinum toxin, ricin and others</td>
</tr>
<tr>
<td>Week 7</td>
<td>Detection of biological warfare agents</td>
</tr>
<tr>
<td>Week 8</td>
<td>Mechanism of action of biological agents</td>
</tr>
<tr>
<td>Week 9</td>
<td>Toxicology, clinical therapy and recovery from biological warfare agents</td>
</tr>
<tr>
<td>Week 10</td>
<td>Radiological and nuclear threats</td>
</tr>
<tr>
<td>Week 11</td>
<td>Mechanism of action of radiological agents</td>
</tr>
<tr>
<td>Week 12</td>
<td>Detection of radiological and nuclear warfare agents</td>
</tr>
<tr>
<td>Week 13</td>
<td>Toxicology, clinical therapy and recovery from nuclear and radiological warfare agents</td>
</tr>
<tr>
<td>Week 14</td>
<td>Novel technologies for CBRN detection in the field</td>
</tr>
<tr>
<td>Week 15</td>
<td>Implications for CBRN detection in the U.S.</td>
</tr>
</tbody>
</table>

IV. Library materials required for this course. This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

a. Please indicate the types of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the extent of use anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

<table>
<thead>
<tr>
<th>Types of print/electronic library resources needed</th>
<th>Extent of use anticipated (on a scale of 0 to 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholarly, Peer-Reviewed Journals</td>
<td>7</td>
</tr>
<tr>
<td>Electronic Databases</td>
<td>6</td>
</tr>
<tr>
<td>Books</td>
<td>5</td>
</tr>
<tr>
<td>Trade Journals</td>
<td>1</td>
</tr>
<tr>
<td>Newspapers</td>
<td>1</td>
</tr>
<tr>
<td>Popular Magazines</td>
<td>1</td>
</tr>
<tr>
<td>Audio-Visual</td>
<td>1</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
</tr>
</tbody>
</table>
b. Please identify specific resources that the Library needs to acquire in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc. Please identify new titles that should be acquired or subject areas in the collection that may need to be enhanced or updated.

New titles needed or subject area to be enhanced:
None

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.
None

After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.
--CHECK LIST--

Please check each box to verify review.

**Overall**

☐ The version of Form B currently posted on the Academic Affairs web site under Curriculum Forms is being used.

☐ Font is Times New Roman, 11 pt, no bold, no “all caps.”

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**Part I - V**

☐ I.c. The catalog description is in complete sentences.

☐ Course catalog descriptions should be understandable to members outside the discipline. Avoid acronyms, abbreviations and terminology specific to the discipline not usually recognized by the general public. Commonly recognized terminology is acceptable, e.g., NASA, DNA, S Corporation.

☐ The final sentence of the catalog description lists any prerequisites, followed by credits, e.g., Prerequisite: IT 161. Credit 3.

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☐ I.i. If the course is proposed to be writing enhanced, course requirements listed in the 15-week class schedule should reflect writing assignments.

☐ II.b. There is nearly always an impact if a new course is added. Adding a new course may require that new faculty be hired or existing teaching assignments be modified, existing courses be deleted, or degree requirements be modified. Offer specific explanation of the modifications.

☐ II.c. Review SHSU course offerings to identify courses with similar titles or content. Err in favor of listing courses that potentially could overlap. Include documentation of discussions with appropriate departmental chairs to avoid duplication.

☐ III.b. Note that the form requires both Title and Publisher. Do not omit the publisher.

Provide a justification if the proposed texts are more than five years old. Check to see if proposed textbooks over two years old are out-of-print.

☐ III.c. If the course features differential content or directed study, provide a sample 15-week class schedule.

☐ IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Sarah Kerrigan  9/14/2012

Department Chair Signature  Date  College Curriculum Committee Chair Signature  Date
LIBRARY COLLECTION REVIEW for PROPOSED COURSE

Proposed Course Prefix and Number: FORS 7385
Proposed Title: Warfare Agents

1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses covering related content as the proposed course, including: BIOL 5375 -- Bacterial Physiology, BIOL 5378 – Virology, CHEM 5381 -- Advanced Physical Chemistry: Thermodynamics, CHEM 536 -- Organic Reaction Mechanisms, and CRIJ 5339 -- Global Terrorism.

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. The most relevant electronic books are provided by CRCNetbase (contains titles such Nuclear, Chemical, & Biological Terrorism: Emergency Response & Public Protection, Handbook of Chemical & Biological Warfare Agents, National Security Issues in Science, Law, & Technology, Emergency Action for Chemical & Biological Warfare Agents, Advances in Biological & Chemical Terrorism Countermeasures, Explosives & Chemical Weapons Identification, Laboratory Biosecurity Handbook, Counter-Terrorism for Emergency Responders, and Emergency Characterization of Unknown Materials). Additional electronic books can be found in Ebsco ebooks and ebrary.

The Library’s print collection includes items on Bioterrorism, Biological Warfare, Biological Weapons, Chemical Terrorism, Chemical Agents, Nuclear Terrorism, and Weapons of Mass Destruction.


Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

None requested.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed: Susan Strickland ________________________________ Date: 15 September 2012
Bibliographer

Signed: Ann H. Holder ________________________________ Date: 9/17/12
Library Director
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:
Proposed Title:

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: _______________________________ Date: ____________________
Writing Enhanced Committee Chair
I. **Course Identification**
   a. Proposed prefix and number: FORS 7389
   b. Proposed title (30 Character Max): Practicum
   c. Proposed catalog description including prerequisites and credit: The practicum affords the doctoral student the opportunity to apply research in a practical setting, adapt technologies for maximal use, appreciate the steps necessary for the implementation of new technology within an accredited environment, and observe the technical and non-technical processes involved. During the practicum students must complete the equivalent of a ten-week, full-time placement (400 hours) in an approved forensic science laboratory or facility. Prerequisite FORS 6371. Credit 3.
   d. Companion course/Co-requisite: No
   e. May course be repeated for credit? No
   f. Maximum number of credit hours that can be earned: 3
   g. Is course eligible to receive a grade of IP? No If yes, justification: 
   h. Is this course exempt from the 3-peat charge? No; If yes, justification: 
   i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) 
      N/A; if yes, attach Writing Enhancement Supplement.
   j. Identify the majors and/or minors for which this course will be required: None
   k. Identify the majors and/or minors for which this course may be an elective: PhD in Forensic Science.

II. **Statement of Need and Program Compatibility**
   a. Justify the need for this course, including how the proposed course will support the present program curriculum.
      This new course is an elective in support of the PhD in Forensic Science. The doctoral program in forensic science promotes interdisciplinary scientific research and academic-industrial partnerships with forensic laboratories. The practicum affords the doctoral students the opportunity to apply research in a practical setting in partnership with an accredited forensic science laboratory. The Forensic Science Program currently collaborates with more than fifty accredited forensic science laboratory. The Forensic Science Program currently collaborates with more than fifty accredited laboratories and organizations.
   b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc.
      This course will be offered in partnership with directors in accredited laboratories and forensic science organizations. No additional faculty are required. The course is an elective and will not influence degree requirements.
   c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses.
      This practicum is specific to the doctoral program in forensic science.
   d. Identify who is likely to be the instructor(s) of this course.
      The practicum will be coordinated by Dr. Sarah Kerrigan, Professor and Chair of Forensic Science.

III. **Course Content**
   a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).
      **Upon completion of this course, the student will be able to:**
      1. Explain the challenges associated with the practical implementation of novel techniques and methodology into an accredited forensic facility.
      2. Adapt technologies for maximal use and effectiveness.
      3. Synthesize and integrate laboratory-based research into routine laboratory use.
4. Describe the administrative and non-technical steps involved with the implementation of new methods or technology within a regulatory environment.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). **If the text is more than 5 years old, please provide a justification.**

<table>
<thead>
<tr>
<th>Author</th>
<th>Title And Publisher</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c. Using a 15-week class schedule, identify the topics to be covered during each week of the semester:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>2</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>3</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>4</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>5</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>6</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>7</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>8</td>
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</tr>
<tr>
<td>9</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>10</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>11</td>
<td>Practicum - Students submit progress report</td>
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<tr>
<td>12</td>
<td>Practicum - Students submit progress report</td>
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<td>13</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>14</td>
<td>Practicum - Students submit progress report</td>
</tr>
<tr>
<td>15</td>
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</tr>
</tbody>
</table>

IV. **Library materials required for this course.** This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

a. Please indicate the **types** of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the **extent of use** anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

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</tr>
</thead>
<tbody>
<tr>
<td>Scholarly, Peer-Reviewed Journals</td>
<td>5</td>
</tr>
<tr>
<td>Electronic Databases</td>
<td>5</td>
</tr>
<tr>
<td>Books</td>
<td>4</td>
</tr>
<tr>
<td>Trade Journals</td>
<td>2</td>
</tr>
<tr>
<td>Newspapers</td>
<td>0</td>
</tr>
<tr>
<td>Popular Magazines</td>
<td>0</td>
</tr>
<tr>
<td>Audio-Visual</td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
</tr>
</tbody>
</table>

b. Please identify **specific** resources that the Library needs to **acquire** in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc. Please identify **new titles** that should be acquired or **subject areas** in the collection that may need to be **enhanced** or **updated**.

**New titles needed or subject area to be enhanced:**
V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.

No additional equipment is needed for this course.

**After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.**
FORM B
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☒ Use terms such as “basic,” “fundamental,” “introduction,” and “overview” sparingly. Upper division courses should seldom be introductory.
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I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Sarah Kerrigan  9/14/2012
Department Chair Signature  Date  College Curriculum Committee Chair Signature  Date
LIBRARY COLLECTION REVIEW for PROPOSED COURSE

Proposed Course Prefix and Number:    FORS 7389
Proposed Title:    Practicum

1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses covering related content as the proposed course including FORS 6371 -- Internship in Forensic Science. The Library’s collection meets the requirements of the forensic science education accrediting body -- Forensic Science Education Programs Accreditation Commission

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. Additional electronic books can be found in Ebsco ebooks and ebrary.

Citations for peer reviewed articles are available through an interdisciplinary mix of databases such as Science Direct, American Chemical Society Publications Database, Web of Science, MEDLINE, and SciFinder Scholar. Some of the indicated databases provide full text of journals articles, from key forensic science journals including Journal of Forensic Sciences, Forensic Science International, and Science & Justice.

Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

None requested or identified.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed:    Susan Strickland    Date: 17 September 2012
Bibliographer

Signed:    Ann H. Holder    Date: 9/17/12
Library Director
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:
Proposed Title:

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: ___________________________ Date: ___________________________
Writing Enhanced Committee Chair
FORM B
REQUEST FOR ADDITION OF A NEW COURSE

I. Course Identification
   a. Proposed prefix and number: FORS 7390
   b. Proposed title (30 Character Max): Forensic Laboratory Management
   c. Proposed catalog description including prerequisites and credit: This course addresses key areas of forensic laboratory management and leadership. It prepares students for administrative and leadership roles in public or private sector forensic science laboratories. It focuses on the integration of technical and discipline specific policies and procedures into the administrative framework of the crime laboratory. Issues include the quality management system, organizational efficiency, fiscal, personnel and resource management, regulation, certification and accreditation. Credit 3.
   d. Companion course/Co-requisite: No
   e. May course be repeated for credit? No
   f. Maximum number of credit hours that can be earned: 3
   g. Is course eligible to receive a grade of IP? No  If yes, justification:
   h. Is this course exempt from the 3-peat charge? No; If yes, justification:
   i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) N/A; if yes, attach Writing Enhancement Supplement.
   j. Identify the majors and/or minors for which this course will be required: PhD in Forensic Science
   k. Identify the majors and/or minors for which this course may be an elective: MS in Forensic Science, MS in Criminal Justice, MA in Criminal Justice, PhD in Criminal Justice.

II. Statement of Need and Program Compatibility
   a. Justify the need for this course, including how the proposed course will support the present program curriculum.
   
   This course will be required for the PhD in Forensic Science. Doctoral students within the program are expected to advance into leadership positions within forensic science organizations. An understanding of the key issues associated with forensic laboratory management and leadership are critical for graduates to be successful.
   
   b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc.
   
   This is a required course for the proposed PhD in Forensic Science and as such, is a critical component of the overall degree requirements. Current faculty have the expertise to teach this course. However, if the Forensic Science Doctoral program is approved, new faculty will be hired to meet the increased need associated with the program.
   
   c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses.
   
   There are no course offerings specific to forensic laboratory management offered at the present time. Although there are more general courses addressing leadership and management, none addresses the specific regulatory framework and quality management systems that define the operational characteristics of a forensic laboratory. Course offerings such as CRIJ 6335 (Seminar in Leadership and Management) do not address the specific regulatory or technology-intensive aspects of forensic science. Doctoral students will be encouraged to take these more generic offerings on management and leadership in Criminal Justice and other Colleges to complement the highly specialized course content offered here.
   
   d. Identify who is likely to be the instructor(s) of this course.
   
   The instructor will be Dr. Sarah Kerrigan, Professor and Chair of Forensic Science.

III. Course Content
a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).

**Upon completion of this course, the student will be able to:**
1. Describe specific challenges associated with forensic laboratory management.
2. Elaborate management and leadership issues within the context of a highly regulated framework.
3. Apply accreditation, certification and forensic reform legislation to crime lab operations and management.
4. Evaluate resources, productivity and the quality management system.

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). **If the text is more than 5 years old, please provide a justification.**

<table>
<thead>
<tr>
<th>Author</th>
<th>Title And Publisher</th>
<th>Year</th>
</tr>
</thead>
</table>

This 2003 text by Academic Press (Elsevier) is the only one of its type. Additional texts are anticipated in light of forensic reform efforts and those will be considered when available.

c. Using a 15-week class schedule, identify the topics to be covered during each week of the semester:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The role of the crime laboratory</td>
</tr>
<tr>
<td>2</td>
<td>Forensic laboratory organizational structure</td>
</tr>
<tr>
<td>3</td>
<td>Regulatory and reform issues in forensic science</td>
</tr>
<tr>
<td>4</td>
<td>Accreditation, certification and oversight of forensic laboratories and personnel</td>
</tr>
<tr>
<td>5</td>
<td>Resource management within the laboratory system</td>
</tr>
<tr>
<td>6</td>
<td>Real and perceived ethical issues and conflicts of interest in crime laboratories</td>
</tr>
<tr>
<td>7</td>
<td>The role of quality assurance in management and leadership</td>
</tr>
<tr>
<td>8</td>
<td>Strategic management and organizational excellence</td>
</tr>
<tr>
<td>9</td>
<td>Project management and the balance of timeliness, quality and criminal justice consequences</td>
</tr>
<tr>
<td>10</td>
<td>Resource management, budgeting and fiscal models within forensic laboratories</td>
</tr>
<tr>
<td>11</td>
<td>Management considerations specific to private vs. publicly funded laboratories</td>
</tr>
<tr>
<td>12</td>
<td>Effective communications, media and public relations</td>
</tr>
<tr>
<td>13</td>
<td>Government relations, partnerships and strategic collaborations</td>
</tr>
<tr>
<td>14</td>
<td>Safety culture</td>
</tr>
<tr>
<td>15</td>
<td>The quality management system in practice</td>
</tr>
</tbody>
</table>

IV. **Library materials required for this course.** This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

da. Please indicate the types of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the **extent of use** anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

<table>
<thead>
<tr>
<th>Types of print/electronic library resources needed</th>
<th>Extent of use anticipated (on a scale of 0 to 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholarly, Peer-Reviewed Journals</td>
<td>6</td>
</tr>
<tr>
<td>Electronic Databases</td>
<td>6</td>
</tr>
<tr>
<td>Books</td>
<td>5</td>
</tr>
<tr>
<td>Trade Journals</td>
<td>2</td>
</tr>
<tr>
<td>Newspapers</td>
<td>2</td>
</tr>
<tr>
<td>Popular Magazines</td>
<td>0</td>
</tr>
<tr>
<td>Audio-Visual</td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
</tr>
</tbody>
</table>
b. Please identify specific resources that the Library needs to acquire in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc. Please identify new titles that should be acquired or subject areas in the collection that may need to be enhanced or updated.

New titles needed or subject area to be enhanced:
None. Existing resources are sufficient.

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.
No additional equipment is needed for this course.

After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.
Overall

- The version of Form B currently posted on the Academic Affairs website under Curriculum Forms is being used.
- Font is Times New Roman, 11 pt, no bold, no "all caps."
- The form has been proofed for spelling and grammar errors. Please note that the Form B template does not have grammar and spell check.
- Every question has a response. If there is not an affirmative response, use "N/A," "No," or "None." as appropriate.

Part I - V

I.c. The catalog description is in complete sentences.
- Course catalog descriptions should be understandable to members outside the discipline. Avoid acronyms, abbreviations and terminology specific to the discipline not usually recognized by the general public. Commonly recognized terminology is acceptable, e.g., NASA, DNA, S Corporation.
- The final sentence of the catalog description lists any prerequisites, followed by credits, e.g., Prerequisite: IT 161. Credit 3.
- Use terms such as "basic," "fundamental," "introduction," and "overview" sparingly. Upper division courses should seldom be introductory.

I.d. Companion courses require concurrent enrollment. This is a rare occurrence. If applicable, the companion course should be listed in the course description.

I.i. If the course is proposed to be writing enhanced, course requirements listed in the 15-week class schedule should reflect writing assignments.

II.b. There is nearly always an impact if a new course is added. Adding a new course may require that new faculty be hired or existing teaching assignments be modified, existing courses be deleted, or degree requirements be modified. Offer specific explanation of the modifications.

II.c. Review SHSU course offerings to identify courses with similar titles or content. Err in favor of listing courses that potentially could overlap. Include documentation of discussions with appropriate departmental chairs to avoid duplication.

III.b. Note that the form requires both Title and Publisher. Do not omit the publisher.
- Provide a justification if the proposed texts are more than five years old. Check to see if proposed textbooks over two years old are out-of-print.

III.c. If the course features differential content or directed study, provide a sample 15-week class schedule.

IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.

Sarah Kerrigan  9/14/2012

Department Chair Signature    Date    College Curriculum Committee Chair Signature    Date
LIBRARY COLLECTION REVIEW for PROPOSED COURSE

Proposed Course Prefix and Number: FORS 7390
Proposed Title: Forensic Laboratory Management

1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses covering related content as the proposed course, including: BIOL 5200 -- Professional Aspects of Science, CRIJ 6332 -- Resource Development in the Organizational Context, CRIJ 6333 -- Seminar in Organization & Administration, and CRIJ 6335 -- Seminar in Leadership and Management.

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. The most relevant electronic books are provided by CRCNetbase (contains titles such Laboratory Biosecurity Handbook, Ensuring Competent Performance in Forensic Practice: Recovery, Analysis, Interpretation, & Reporting, Implementing Quality in Laboratory Policies and Processes: Using Templates, Project Management & Six Sigma, and Quality Assurance in the Pathology Laboratory: Forensic, Technical, & Ethical Aspects). Additional electronic books can be found in Ebsco ebooks and ebrary.

The Library’s print collection includes items on Forensic Sciences, Forensic Scientists, Crime Laboratories, and Pathological Laboratories.


Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

None requested. The Library owns the required textbook.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed: Susan Strickland ___________________________ Date: 15 September 2012
Bibliographer

Signed: Ann H. Holder ___________________________ Date: 9/17/12
Library Director
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:
Proposed Title:

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: ________________________________ Date: __________________________

Writing Enhanced Committee Chair
FORM B
REQUEST FOR ADDITION OF A NEW COURSE

I. Course Identification
a. Proposed prefix and number: FORS 8099
b. Proposed title (30 Character Max): Dissertation
c. Proposed catalog description including prerequisites and credit: NA
d. Companion course/Co-requisite: No
e. May course be repeated for credit? Yes
f. Maximum number of credit hours that can be earned: 18
g. Is course eligible to receive a grade of IP? No If yes, justification:
h. Is this course exempt from the 3-peat charge? No; If yes, justification:
i. Is the proposed course eligible to be offered as writing enhanced? (applies only to undergraduate courses) N/A; if yes, attach Writing Enhancement Supplement.
j. Identify the majors and/or minors for which this course will be required: PhD in Forensic Science
k. Identify the majors and/or minors for which this course may be an elective: None

II. Statement of Need and Program Compatibility
a. Justify the need for this course, including how the proposed course will support the present program curriculum.
   This course will provide dissertation credit to students enrolled in the PhD in Forensic Science. The doctoral degree requires 83 semester credit hours beyond the bachelor's level, of which a minimum of 15 hours must be dissertation credit.

b. Explain how the addition of this course will directly or indirectly influence personnel rotation, inventory of courses, degree requirements, etc.
   This is a required course for the proposed PhD in Forensic Science and as such, is a critical component of the overall degree requirements. Current faculty possess the requisite expertise to supervise dissertations. Moreover, if the Forensic Science Doctoral program is approved, new faculty will be hired to meet the need.

c. Identify courses with similar titles or similar contents currently offered in other departments. Explain how this course is different. Identify representatives from departments offering courses with similar titles or contents who have reviewed this proposal and summarize their responses.
   NA. These dissertation credit hours are specifically required for the proposed PhD in Forensic Science.

d. Identify who is likely to be the instructor(s) of this course.
   Dr. Sarah Kerrigan, Professor and Chair of Forensic Science.

III. Course Content
a. List the course objectives as expected student outcomes. Objectives should be specific, measureable, and appropriate for the course level (i.e., graduate courses should not “introduce” or “identify”).
   Upon completion of this course, the student will be able to:
   NA

b. Identify the proposed text(s) for the course (include full name of author, title, publisher and date). If the text is more than 5 years old, please provide a justification.

<table>
<thead>
<tr>
<th>Author</th>
<th>Title And Publisher</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


c. Using a 15-week class schedule, identify the topics to be covered during each week of the semester:
IV. **Library materials required for this course.** This section is to help the Library review the adequacy of the current collection and plan for the future allocation of resources to better meet the needs of students enrolled in this course.

a. Please indicate the **types** of library resources you expect students to use for this course. Using a scale of 0 to 7, indicate the **extent of use** anticipated for each type of library resource selected. [0 = no use to 7 = extensive use]

<table>
<thead>
<tr>
<th>Types of print/electronic library resources needed</th>
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</tr>
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<tbody>
<tr>
<td>Scholarly, Peer-Reviewed Journals</td>
<td>7</td>
</tr>
<tr>
<td>Electronic Databases</td>
<td>7</td>
</tr>
<tr>
<td>Books</td>
<td>6</td>
</tr>
<tr>
<td>Trade Journals</td>
<td>1</td>
</tr>
<tr>
<td>Newspapers</td>
<td>0</td>
</tr>
<tr>
<td>Popular Magazines</td>
<td>0</td>
</tr>
<tr>
<td>Audio-Visual</td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
</tr>
</tbody>
</table>

b. Please identify **specific** resources that the Library needs to **acquire** in support of this course. These resources could include but are not limited to (both print and electronic) journals, electronic databases, books, etc. Please identify **new titles** that should be acquired or **subject areas** in the collection that may need to be **enhanced** or **updated**.

**New titles needed or subject area to be enhanced:**
None. Existing resources are sufficient.

V. Please identify equipment and technological resources required for this course. This section addresses the need for specialized laboratory equipment, computer software or other physical resources not generally available on campus.

No additional equipment is needed for this course.

---

**After this form has been completed, contact a Bibliographer/Librarian to complete the Library Collection Review (LCR) form. The LCR form should be attached to Form B before the proposal is forwarded to your College Curriculum Committee.**
FORM B
—CHECK LIST—
Please check each box to verify review.

**Overall**

☑ The version of Form B currently posted on the Academic Affairs web site under Curriculum Forms is being used.
☑ Font is Times New Roman, 11 pt, no bold, no “all caps.”
☑ The form has been proofed for spelling and grammar errors. Please note that the Form B template does not have grammar and spell check.
☑ Every question has a response. If there is not an affirmative response, use “N/A,” “No,” or “None” as appropriate.

**Part I - V**

☑ I.c. The catalog description is in complete sentences.

☑ Course catalog descriptions should be understandable to members outside the discipline. Avoid acronyms, abbreviations and terminology specific to the discipline not usually recognized by the general public. Commonly recognized terminology is acceptable, e.g., NASA, DNA, S Corporation.

☑ The final sentence of the catalog description lists any prerequisites, followed by credits, e.g., Prerequisite: IT 161. Credit 3.

☑ Use terms such as “basic,” “fundamental,” “introduction,” and “overview” sparingly. Upper division courses should seldom be introductory.

☑ I.d. Companion courses require concurrent enrollment. This is a rare occurrence. If applicable, the companion course should be listed in the course description.

☑ I.i. If the course is proposed to be writing enhanced, course requirements listed in the 15-week class schedule should reflect writing assignments.

☑ II.b. There is nearly always an impact if a new course is added. Adding a new course may require that new faculty be hired or existing teaching assignments be modified, existing courses be deleted, or degree requirements be modified. Offer specific explanation of the modifications.

☑ II.c. Review SHSU course offerings to identify courses with similar titles or content. Err in favor of listing courses that potentially could overlap. Include documentation of discussions with appropriate departmental chairs to avoid duplication.

☑ III.b. Note that the form requires both Title and Publisher. Do not omit the publisher.

☑ Provide a justification if the proposed texts are more than five years old. Check to see if proposed textbooks over two years old are out-of-print.

☑ III.c. If the course features differential content or directed study, provide a sample 15-week class schedule.

☑ IV. The library has been supplied with an electronic copy of this course request at least 2 weeks prior to the college submission deadline.

**I certify that the Form B submitted to the University Curriculum Committee has been reviewed and complies with the stipulations on this checklist.**

Sarah Kerrigan  9/14/2012

Department Chair Signature  Date  College Curriculum Committee Chair Signature  Date
LIBRARY COLLECTION REVIEW for PROPOSED COURSE

Proposed Course Prefix and Number: FORS 8099
Proposed Title: Dissertation

1. Results of the librarian’s review of the adequacy of library holdings to support the proposed course content areas and assignments. Please be specific, and indicate whether the subject areas of the course require new expenditures, or are already included in the collection due to library support of courses with similar information needs.

The Library has a growing collection to support the forensic science program. The collection supports study, research, and coursework in graduate courses which comprise the Forensic Science Program. The Library’s collection meets the requirements of the forensic science education accrediting body -- Forensic Science Education Programs Accreditation Commission

This course will be supported with existing Library resources. Newton Gresham Library’s monograph collection, journal collection, and online resources will support this course. Additional electronic books can be found in Ebsco ebooks and ebrary.

Citations for peer reviewed articles are available through an interdisciplinary mix of databases such as Dissertation Abstracts, Science Direct, American Chemical Society Publications Database, Web of Science, MEDLINE, and SciFinder Scholar. Some of the indicated databases provide full text of journals articles, from key forensic science journals including Journal of Forensic Sciences, Forensic Science Interational, and Science & Justice.

Articles not available online may be found in the Library's physical holdings; items not available in the Library collection can be provided by Interlibrary Services.

2. Identify additional resources that are likely to be needed, and the approximate cost of the materials.

None requested or identified.

3. Bibliographer’s comments (state any concerns regarding the library’s support of the course).

The current collection development budget will adequately support this course.

Signed: Susan Strickland  Date: 17 September 2012
Bibliographer

Signed: Ann H. Holder  Date: 9/17/12
Library Director
WRITING ENHANCEMENT SUPPLEMENT

Proposed Course Prefix and Number:
Proposed Title:

Briefly explain how the writing requirement will be met in this course, keeping in mind that 50% or more of the course grade must be derived from written assignments, either formal or informal.

Reviewer’s Notes:

Signed: ___________________________ Date: ______________________

Writing Enhanced Committee Chair
Recommended Appendix B

Specific Clinical or In-Service Sites to Support the Program:

Current Internship Agencies Illustrating Existing Academic-Industrial Partnerships
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
- Federal Aviation Administration Civil Aerospace Medical Institute, Oklahoma City, OK
- Erie Co. Medical Examiner’s Office, Forensic Toxicology Laboratory, Buffalo, NY
- 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, Crime Laboratory, 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

Texas 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 Drug Enforcement Administration, DEA South Central Laboratory, Dallas, TX
• United States Department of Homeland Security, Customs and Border Protection, Southwest Regional Science Center, Houston, TX
Recommended Appendix C

Letters of Support
Brian J. Gestring  
Director, Office of Forensic Services  
State of New York  
Division of Criminal Justice Services  
Albany, NY

Brian Gestring is a veteran forensic scientist from the New York Police Department Crime Laboratory. He is also a former professor, forensic science program director and Forensic Science Education Program Accreditation Commission (FEPAC) assessor. In his current position, he is responsible for oversight over the 22 accredited forensic laboratories in New York State and the collection of DNA samples from convicted offenders for the State’s DNA database.

Max M. Houck, Ph.D.  
Director, Department of Forensic Sciences  
Consolidated Forensic Laboratory  
Washington, D.C.

Dr. Max Houck is a past Chair of the Forensic Science Education Programs Accreditation Commission (FEPAC). Formerly he was a professor from West Virginia University and a forensic scientist for the Federal Bureau of Investigation. He currently serves as the Director of the Consolidated Forensic Laboratory (CFL) in Washington DC, a newly formed $220 million dollar independent government facility that will house the new Department of Forensic Sciences (DFS), Metropolitan Police Department (MPD) Crime Scene Investigation units, public health laboratory, and the Office of the Medical Examiner.
D. Pat Johnson  
Deputy Assistant Director  
Law Enforcement Support-Crime Laboratory Service  
Texas Department of Public Safety  
Austin, TX  

Assistant Director Johnson is responsible for the crime laboratory system in Texas, including the thirteen state crime laboratories, breath alcohol testing program and the CODIS database (Combined DNA Index System). In accordance with Title 37 of the Texas Administrative Code, Chapter 28, Subchapter H, the Texas Department of Public Safety also oversees the accreditation of forensic laboratories in the State of Texas.

Lynn M. Robitaille  
General Counsel  
Texas Forensic Science Commission  
Austin, TX  

Lynn Robitaille currently serves as the Texas Forensic Science Commission’s General Counsel. As a former litigator with expertise in internal and special investigations in Washington DC, Ms. Robitaille is now an integral part of the Commission’s activities. The mission of the Texas Forensic Science Commission is to strengthen the use of forensic science in criminal investigations and courts by developing a process for reporting professional negligence or misconduct; investigating allegations of professional negligence or misconduct; promoting the development of professional standards and training; and recommending legislative improvements.
September 25, 2012

Sarah Kerrigan, Ph.D.
Professor and Chair
Forensic Science Department
Sam Houston University
1003 Bowers Boulevard
Huntsville, TX 77341

Dear Dr. Kerrigan:

I wanted to thank you for your call last week and describing the doctoral program that you are proposing. Over the years I have been increasingly frustrated with the lack of terminal degree options in Forensic Science. It is my opinion that many of the systemic problems that plague the field are directly linked to the dearth of Forensic Science doctoral programs.

While several Universities have doctoral programs in other disciplines with either a research emphasis or a concentration in Forensic Science, there are no doctoral programs in Forensic Science in the United States. Currently the vast majority of forensic science practitioners lack a terminal degree and sufficient scientific background to become effective leaders in the field. Programs such as the one you have described to me have the potential to create these leaders and cement the foundations of the science that we use.

Much like an auto mechanic trying to fix an engine while it’s still running, the next generation of forensic scientists must learn how to perform meaningful research to validate and improve techniques that have been used for almost a century, and that are still being used today. This generation must learn how to employ successful business strategies that allow them to manage limited resources and the large volume of evidence that must be examined. They must also learn how to harness the full potential of scientific breakthroughs to advance the field.
Over the course of my career I have worked in nearly every area of forensic science in positions ranging from bench level examiner to Crime Laboratory Manager. As an academic, I served as an Assistant and Associate Professor as well as the Director of a large undergraduate/graduate program. In my current position, I am responsible for oversight over the 22 accredited forensic laboratories in New York State and the collection of DNA samples from convicted offenders for the State’s DNA database.

In virtually all of these capacities, I have been advocating for doctoral programs in Forensic Science for the reasons I have already described. Creating a program like the one you described to me will be no easy task, but if anyone can do it, it’s you. When we first met, I was the lead assessor on your first FEPAC inspection. Despite being very pregnant with your second child at the time, the other assessor and I had a hard time keeping up with you as you showed off the Master’s program you created.

Your organizational ability, attention to detail, and drive were, and continue to be impressive and a real asset to Sam Houston State. To further illustrate this point, not only have you created the first accredited graduate Forensic Science program in Texas, but you have also gone on to start an ASCLD/LAB ISO 17025 accredited forensic laboratory at the University. This is a monumental administrative achievement and a good indicator of the level of confidence your institution has in your abilities. ASCLD/LAB ISO is the highest level of accreditation available to a forensic laboratory, and it requires significant institutional support.

Thank you for taking this project on. Should you or anyone at your institution wish to discuss this further, please do not hesitate to contact me at (518) 402-0658.

Very truly yours,

Brian J. Gestring
Director, Office of Forensic Services
September 25, 2012

Dr. Sarah Kerrigan
Department of Forensic Science
Sam Houston State University Box 2525
Chemistry and Forensic Science Building, 221A
1003 Bowers Blvd
Huntsville, TX 77340

Dear Sarah,

This letter is in support of your efforts to pursue approval for a Ph.D. program in the forensic sciences. As a long-time advocate for improvement in forensic education, I applaud your work towards this degree, your curriculum, and its structure. I think it is long past due for a program of standing to develop and offer such a degree and I am pleased SHSU has the courage and vision to consider it.

As you know, my work in forensic education started as the project director for the Technical Working Group for Education and Training in Forensic Science (TWGED). The goal of TWGED was recommending best practices for educational curricula in forensic science. These recommendations encompassed the best practices and procedures for initial and continuing training models to provide those seeking to become forensic scientists with the educational and practical knowledge and skills necessary to effectively support their role in the criminal justice system. TWGED's work product became the foundation for the Forensic Science Educational Program Accreditation Commission (FEPAC), which I Chaired for six years. In that time, I have seen forensic education professionalize, grow, and strengthen as programs, like SHSU, have sought and achieved FEPAC accreditation.

Many FEPAC programs offer Masters degrees and some consider this the terminal degree in our profession. I disagree. Graduate programs must move students from theoretical concepts to discipline-specific knowledge. Graduate programs should be designed with strong laboratory and research components. Access to instructional laboratories with research-specific facilities, equipment, and instrumentation and interaction with forensic laboratories are required to enhance the graduate-level experience. Written and oral communication and report writing must be emphasized. While a Masters program can do some of this, for forensic science to advance as a profession, research-level Ph.D. programs in the forensic sciences are necessary.
They are also rare, at least in the US. I pursued my Ph.D. in Australia because of the restrictions in curriculum and the lack of forensic doctorate degree programs in the US. Programs like the one SHSU has proposed are desperately needed for the US to keep apace with changes in science, forensic science, and technology.

I fully support your Ph.D. program and curriculum. The strength of the coursework and the rigor is demonstrates will produce, under the tutelage and guidance of your excellent faculty, the next generation of scientific leaders in the forensic sciences.

Please do not hesitate to let me know how I can help in this endeavor.

Sincerely,

Max M. Houck, Ph.D.
Director, Department of Forensic Sciences
Consolidated Forensic Laboratory
401 E Street SW
Washington, D.C. 20024
max.houck@dc.gov
202-727-7370
September 19, 2012

Dr. Sarah Kerrigan
Sam Houston State University
College of Criminal Justice
Forensic Science Department

Dear Dr. Kerrigan:

I received your e-mail this week along with the description of the doctorate program in Forensic Science that you are planning in your department. As you have so effectively stated, in the 2009 National Academy of Sciences report to Congress with regard to improving forensic science, there are needs to conduct basic research, in order to establish that many of the long used forensic testing procedures are actually scientifically valid. You are also correct that most crime laboratories are burdened with more analytical work to perform than resources to do it, so they don’t have the manpower to be conducting the needed research.

Further, as you have stated, crime laboratory managers these days need to not only have strong science backgrounds in chemistry and molecular biology, but also need to learn how to manage projects as well as people. They need to learn how to provide good customer service, which will include some business management skills. The business aspects of managing a crime laboratory inevitably will also include accessing resources, usually from the public entity funding the operation. This could be at the city, county, or state level, so the lab director will be pitching a plan to the city council, county commissioners, or state legislature to obtain funding, as well as writing federal grant applications, and then managing those grants.

So for both the needs for research, and the needs to help a prospective crime lab director gain the skills necessary for the position, a doctorate degree appears both beneficial and appropriate.

I commend Sam Houston State University for their efforts in creating such a program. We have had students of the SHSU master’s program in Forensic Science intern in our DPS crime laboratories, and we have employed your graduates as Forensic Scientists in several of our labs. This has been a good experience for DPS, and I am sure that we could also benefit from employment of your Ph. D. graduates sometime in the future.

While we cannot endorse a particular product or service, we can acknowledge the need for skilled Forensic Scientists and crime laboratory managers and directors. Given that acknowledgement, I support the Ph. D. program that you have presented.
Yours truly,

D. Pat Johnson
Deputy Assistant Director
Law Enforcement Support Division
Crime Laboratory Service
September 26, 2012

Via Hand Delivery

Sarah Kerrigan, Ph.D
Professor and Chair
Forensic Science Department
Sam Houston State University
Huntsville, Texas 77320

Re: Letter of Support for Ph.D Program in Forensic Science

Dear Dr. Kerrigan:

I write this letter in support of the Ph.D Program in Forensic Science proposed by Sam Houston State University (“SHSU”). As General Counsel of the Texas Forensic Science Commission, I am privileged to provide counsel to the state agency entrusted with oversight of accredited crime laboratories in Texas. I am confident the State of Texas would benefit tremendously from the comprehensive and rigorous forensic science Ph.D program proposed by SHSU.

The Texas Forensic Science Commission was created by the Texas Legislature in 2005. The Commission is required to investigate allegations of negligence and misconduct that would substantially affect the integrity of the results of a forensic analysis conducted by an accredited crime laboratory. Tex. Code Crim. Proc. art. 38.01 § 4(a)(3). The Commission also has a significant forensic development and education component to its mission. Since its inception, the Commission has witnessed the tremendous need for forensic science education, high-level research, validation of forensic methodologies, and academic-industrial partnerships in Texas. These are exactly the issues upon which the proposed Ph.D program in forensic science would focus.

Commission Office
Lynn M. Robitaille
Commission General Counsel
Leigh M. Tomlin
Commission Coordinator

Texas Forensic Science Commission
1700 North Congress Avenue, Suite 445
Austin, Texas 78701

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The Commission recently hosted a groundbreaking stakeholder roundtable event which brought together forensic science stakeholder from across Texas, including prosecutors, defense lawyers, judges, legislators and their staff, forensic scientists, law enforcement, university professors, and advocacy organizations. After the meeting, the Commission released a report summarizing the discussion and emphasizing the tremendous need for reliable research and academic-industrial collaboration in the area of forensic science. Stakeholders expressed a strong need for exactly the type of innovative approach envisioned by the SHSU Ph.D program. If the program is approved, crime laboratories in Texas will have the opportunity to become engaged in meaningful scientific research, and the university will become an even greater leader in forensic science education and industry partnerships. Moreover, the Ph.D program is likely to be well-received by key legislators in Texas, as it would help provide an additional vehicle for enhancing the integrity and reliability of forensic science in Texas crime laboratories.

Many legislators, judges and other stakeholders in the forensic science community in Texas have closely followed the recommendations contained in a February 2009 National Academy of Sciences report entitled *Strengthening Forensic Science in the United States: A Path Forward*. The report emphasizes the importance of academia in advancing forensic science technologies, validating existing science and delivering highly trained and well-prepared scientists to crime laboratories. In fact, the Commission recently attended a meeting of the White House Subcommittee on Forensic Science in Washington, D.C., during which the need for research, validation studies and academic-industrial partnerships was discussed at length. Texas was among a handful of states invited to present its experience in forensic science oversight and development to attendees. The Commission expects national legislators and policymakers to continue to look to Texas for leadership on these issues. The SHSU Ph.D program would provide an outstanding example of leadership and innovation, and would be promoted by other states seeking to enhance the quality of forensic science practiced in their crime laboratories.

In closing, I strongly encourage the Texas State University system to approve the proposed SHSU Ph.D program in forensic science. The academically robust, thoughtful and collaborative nature of the program has the potential to benefit students and criminal justice stakeholders nationwide. Please feel free to contact me with any questions you may have. Thank you.

Sincerely,

Lynn M. Robitaille