Forensic Science MS

Ability to Conduct Original Research

Goal Description:

Students and faculty engaged in research will publish or present results in the form of peer-reviewed journal articles or national conference proceedings.

Providing Department: Forensic Science MS

RELATED ITEMS/ELEMENTS --

RELATED ITEM LEVEL 1

Students will Prepare Written Research of Publishable Quality
Learning Objective Description:

Students actively engaged in research projects sponsored by program faculty will develop the technical writing skills and scientific abilities required to publish their findings in journals or present their data at scientific meetings.

RELATED ITEM LEVEL 2

Student Preparation of Research Materials for Publication/Presentation
Indicator Description:

Students will contribute to the knowledge base of forensic science and produce research directed at improving the practice of forensic science. This may be demonstrated by publication of research in a peer reviewed scientific journal or national/international conference proceeding (e.g. American Academy of Forensic Sciences Annual Meeting). Publication of student research in journals and at national or international conferences serves to demonstrate the value and quality of the work to the forensic science and/or scientific community.

Criterion Description:

Program-sponsored research will result publication rates of 0.5 publication/student (50%) at the MS level. Publication rates will be calculated as follows: Number of publications involving MS students / number of full-time students enrolled during the academic year. Publications may include peer-reviewed journal articles or conference proceedings.

Findings Description:

During AY 21-22, there were 0.5 publications per MS student compared with 0.2 last year. During this cycle, 21 MS students produced 10 total publications (1 journal article and 9 conference proceedings). In the past, a large number of conference papers were generated as a result of internship, although that is no longer common. It is difficult to produce conference papers or publications during the MS program due to the timing of abstract deadlines and the fact that publications often are prepared towards the end of the degree (or post-graduation). These publications are a significant increase over past years and may indicate increased publication output as a result of a journal-style report for Capstone papers. Increased opportunities to present at virtual or hybrid conferences may have also played a role in increased number of conference proceedings.

Attached Files
📄 Publications by AY.pdf

RELATED ITEM LEVEL 3

Student Preparation of Research Materials for Publication/Presentation
Action Description:

Continue to monitor this metric and continue to emphasize dissemination of work via conference proceedings as well as peer-reviewed publications. Encourage faculty to submit manuscripts with MS research for external publication, even if it is post-graduation. Encourage earlier engagement in research (when/where possible).

Integration of Knowledge, Skills, and Abilities

Goal Description:

Students completing the MSFS will integrate knowledge, skills and abilities learned in the curriculum and formulate an independent research project to be conducted in an environment conducive to research and scholarly inquiry.

Providing Department: Forensic Science MS

RELATED ITEMS/ELEMENTS -

RELATED ITEM LEVEL 1

MS Students will Demonstrate Competency in Research
Learning Objective Description:

Students completing the Master of Science in Forensic Science will demonstrate competency in technical writing and technical laboratory performance during their independent research project.

RELATED ITEM LEVEL 2

Capstone Research Report Scoring Methodology
Indicator Description:

Consistent faculty-developed scoring methodology will be applied to the capstone research report for FORS 6094 – Forensic Science Research. The scholarly report will demonstrate advanced discipline-specific knowledge, investigation, and problem-solving ability.

Criterion Description:

At least 90% of students will be assessed as "satisfactory" (comparable to a B) or higher (A) using the uniform faculty-developed rubric. The final report will be scored by each member of the committee, consisting of a minimum of three individuals (one of whom must be external to the department).

Findings Description:

A total of 9 students completed MS-level research. This number does not include the number of doctoral students who were involved in Capstone. A total of 27 final report evaluations were received (3 per student; 2 internal faculty and 1 external member to the department). All final report evaluations were satisfactory (B or higher). Oral defenses were conducted in-person with a streaming/virtual Zoom option which allowed increased participation from external committee members. Despite disruptions to laboratory activities from student illness & quarantines, all students performed satisfactorily (67% As and 33% Bs in laboratory performance). The criterion for this objective was met this year.

Attached Files
📄 MS Research Performance.pdf

RELATED ITEM LEVEL 3

Capstone Research Report Scoring Methodology
Action Description:

Continue to provide virtual/remote attendance at Capstone oral defenses to encourage participation of external committee members. Faculty will review deadlines of paper and will determine more suitable deadlines -- some external committee members felt that receiving a copy

of the paper before attending the presentation would allow them better insight and more understanding of the project from a deeper level than is achievable in a short oral presentation.

Job Readiness

Goal Description:

Graduates will possess the required theoretical knowledge and technical skill set to be effective in the workplace.

Providing Department: Forensic Science MS

RELATED ITEMS/ELEMENTS -

RELATED ITEM LEVEL 1

Graduates will Acquire Necessary Workplace Skills

Learning Objective Description:

Graduates have developed the necessary knowledge, skills and abilities for successful employment in a forensic setting.

RELATED ITEM LEVEL 2

Employer Survey

Indicator Description:

An Employer Satisfaction Survey is conducted twelve months after graduation. Employers are asked to assess whether SHSU graduates posses the appropriate workplace skills. Using a scale of 1 to 4, (1=very unsatisfactory, 2=unsatisfactory, 3=satisfactory, and 4=highly satisfactory), employers assess job readiness.

Criterion Description:

At least 90% of all responses must be ranked as 3 (satisfactory) or 4 (highly satisfactory).

Findings Description:

Of the 11 graduating students, 8 sought employment in forensic science and three transferred into our PhD program. A total of eight employer satisfaction surveys were sent out and the response rate was 87.5%. All (100%) of the respondents stated that they would hire additional MSFS graduates in the future and that the MSFS graduates are technically capable of entry-level positions. Employers were "satisfied" or "highly satisfied" in all categories so the criterion were met. A total of 71% were highly satisfied that graduates had appropriate workplace skill and were adequately prepared for the workplace. Of note, the Postgraduate Survey also indicated very high levels of satisfaction from students related to postgraduate preparedness. Ratings related to skills & knowledge required for the workplace, practical application of skills & knowledge, and hands-on skills were among the highest scores seen in recent years.

We also offered the opportunity for graduating students to take the Texas Forensic Science Commission Licensing Exam. Previously, employment with a forensic science provider was a requirement to be eligible to take the exam. This year 100% of students (n=12) passed the exam and were able to take that with them to their first job post-graduation. This is an excellent opportunity for students to apply the knowledge they've acquired during their graduate education and provides a leg-up when job searching and hiring.

Attached Files

📄 MS Postgraduate Preparedness.pdf
📄 MS Employer Satisfaction Survey.pdf

Employer Survey
Action Description:
Continue to monitor graduates in job readiness and employer satisfaction, particularly as we come out of the pandemic and return to normalcy. Continue to place strong emphasis on workplace readiness in terms of hands-on instruction, problem solving, knowledge of standards development activities, and industry trends and licensing. Continue to offer licensing exam at the end of their 2nd year and go back to students who are now enrolled in our PhD program to allow them the opportunity to take licensing exam prior to their graduation (if desired). Faculty will continue to strengthen graduate student culture and help foster workplace skills beyond scientific knowledge (time management, independence, problem solving abilities, etc).

Postgraduate Success

Goal Description:
This performance indicator is a measure of post-graduate success with respect to employment in the area of forensic science or the pursuit of research or an advanced graduate degree.

Providing Department: Forensic Science MS

RELATED ITEMS/ELEMENTS -

RELATED ITEM LEVEL 1

Postgraduate Employment or Placement
Performance Objective Description:
MS graduates will be employed in the area of forensic science or will pursue advanced graduate studies or research.

RELATED ITEM LEVEL 2

Job or Advanced Program Placement
KPI Description:
The number of MS graduates that are successfully employed in forensic careers or pursue advanced degrees or full time research within 12 months of graduation.

Results Description:
Post-graduate success during this assessment cycle was 100% (for the second year in a row) with a ten-year average of 96%. Three students who successfully met the requirements for the MS degree advanced to the doctoral program. All MS graduates were employed in forensic science within 12 months of graduation. While the number of students employed in the private sector (19%) has remained steady, the number of students pursuing research post-graduation has increased from 14% to 24% over the past five years.

Attached Files
📄 Postgraduate Success - July 2022.pdf

RELATED ITEM LEVEL 3

Job or Advanced Program Placement
Action Description:
In addition to providing students with the necessary workplace skills, continue to provide assistance with employment searching, resume writing, and career advising (at the department level). Encourage more student engagement in the growing number of professional development opportunities that are being offered by other departments, including The Graduate School on campus.

Update to Previous Cycle's Plan for Continuous Improvement Item

Previous Cycle's Plan For Continuous Improvement (Do Not Modify):

Closing Summary

Although student satisfaction rates during this assessment cycle were extremely high, this has been at the expense of faculty and staff burnout. Proposed changes to faculty workloads and the implementation of postdoctoral fellows is critical in terms of remediation. It will also help improve publication rates for MS students (which are typically low) and enhance research and operational support. During this academic year all graduating MS students took the General Forensic Analyst Licensing Examination described under [Tex. Admin. Code Chapter 651, Subchapter C](#). All graduating students passed this examination which is extremely advantageous from the standpoint of postgraduate success. The program should continue to offer this to graduating students and expand this opportunity to doctoral students.

Update of Progress to the Previous Cycle's PCI:

In this cycle, no changes were made to faculty workload and faculty/staff burnout has remained high. Postdoctoral fellows were requested but not approved. Student satisfaction suffered as a result. A workload that is more reflective of research-productive faculty will allow for increased publications and improved student satisfaction of research experience.

The students were offered the licensing exam and again there was a 100% passing rate. The program should continue to offer this to graduating students and we will expand to doctoral students.

New Plan for Continuous Improvement Item

Closing Summary:

During the next AY 22-23, the department hopes to 1) evaluate faculty workload, 2) hire postdoctoral fellows, 3) improve student research experience (workplace readiness, student satisfaction), 4) evaluate student research interests prior to admission, and 5) execute curriculum mapping exercises.

Focus on workload and postdoctoral fellows will allow faculty to dedicate more time to research (supervision, publications, student skills, and grant writing) which will in turn allow for improved student research experience and increased workplace readiness. A comprehensive department Quality Review conducted over summer identified key action items that will be implemented over the next AY.

Evaluation of student research interests prior to admission will allow us to provide a balance of interests, ensure sufficient elective offerings, and reduce clustering associated with research supervision.

Curriculum mapping will also benefit the department in order to ensure more predictive scheduling, improve academic advising, and ensure elective offerings are meeting the needs of the students while also meeting licensing requirements and professional standards published by Standards Development Organizations (SDOs).