

Program Assessment:

SPRING 2009

ANALYSIS and REFLECTION

MSFS Program

**Division of Natural Sciences and
Mathematics**

Chaminade University

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1. Assessment Goals and Current Status

1.1. Overview.

The ultimate assessment of the success of the Forensic Sciences Program in preparation of a student is their performance following completion of the program. This assessment consists of two parts and will take place during the final year of the program. The first is in the Internship and the second will be a capstone examination administered during the last semester of the program.

All students are required to complete an **Internship Program**. This internship is to be based in a functioning forensic laboratory in an accredited agency, such as the Department of the Medical Examiner, Honolulu Police Department or Naval Criminal Investigation Section. During the internship the student is to perform actual forensic examinations under the supervision of a professional in a given area of expertise. The supervisor provides a written assessment of the student's competence and professionalism during their internship experience. Additionally, the student is required to submit a journal detailing their activities and an assessment of their internship experience.

The **Capstone Examination** covers the major concepts of the Forensic Sciences, including technical aspects and ethical issues. Questions are designed to demonstrate competence in the major areas expected for advanced crime laboratory workers or scene investigators. These questions will be tied directly to the materials covered in the required Forensic Sciences Core courses. MSFS students will be included in the Divisional Pre-exit assessment carried out by the Dean's office. This consists of the administration of a survey in their graduating semester which has the following components: (1) Survey analysis of student perception of the Program, (2) Comprehensive examination questioning on subject-specific knowledge.

1.2. Current Status

As of October 2009, we have graduated 9 students from the MSFS program. Of these, 8 completed the comprehensive examination and survey portions of the Divisional Exit instrument. This low n value has led us to decide to delay analysis and interpretation of these data until at least 15 students have graduated from the program (projected Fall 2010). Thus at this stage the MSFS student data have been incorporated into the undergraduate statistics deriving from the Divisional Exit Instrument, but not disaggregated from the total student group in FS.

All graduates of the MSFS program have completed the internship portion of their capstone project. Our assessment rubric and student performance per the rubric are presented below.

2. Assessment Rubric, MSFS Capstone Experiences.

| | Exemplary | Very Good | Proficient | Substandard | Unacceptable |
|----------------------------------|---|---|--|---|--|
| Component 1 | | | | | |
| Comprehensive Examination | <p>Consistent demonstration of knowledge base and problem solving skills that reflect attainment of PLO for graduate program;</p> <p>Wide-ranging knowledge of both basic and advanced concepts and ability to consistently solve complex problems.</p> | <p>Usually able to demonstrate knowledge base and problem solving skills that reflect attainment of PLO for graduate program;</p> <p>Some gaps in factual knowledge concerning minor areas of concept and some inability to solve complex problems.</p> | <p>Demonstrates knowledge base and problem solving skills that reflect attainment of PLO for graduate program but not consistently;</p> <p>Major concepts are known but some advanced conceptual knowledge is lacking;</p> <p>Problem solving skills are adequate.</p> | <p>Does not demonstrate knowledge base and problem solving skills that reflect attainment of PLO for graduate program;</p> <p>Knowledge of both basic and advanced concepts is lacking, and only straightforward problems are solved.</p> | <p>Does not demonstrate knowledge base and problem solving skills that reflect attainment of PLO for graduate program;</p> <p>Unable to demonstrate even basic conceptual knowledge and cannot engage in problem-solving at any level.</p> |
| Benchmark | <i>Mean score 85% or greater on combined major and support discipline examination</i> | <i>Mean score 75% or greater on combined major and support discipline examination</i> | <i>Mean score 65% or greater on combined major and support discipline examination</i> | <i>Mean score 55% or greater on combined major and support discipline examination</i> | <i>Mean score <55% on combined major and support discipline examination</i> |
| Component 2 | | | | | |
| Indirect Survey | <p>Student perceives that extensive knowledge has been gained in a variety of subject areas in FS;</p> <p>Student has received professional development opportunities and has received academic and technical support enabling successful completion of a degree.</p> | <p>Student perceives that a wide range of knowledge has been gained in a variety of subject areas in FS, with some under-served areas;</p> <p>Professional development opportunities and support have been generally available.</p> | <p>Student perceives significant gaps in subject areas in FS instruction has been provided;</p> <p>Professional development opportunities and support have been not been widely available.</p> | <p>Student perceives lack of provision in several areas of instruction in FS;</p> <p>Professional development opportunities and support have been available but there are some areas of inadequacy.</p> | <p>Student perceives lack of provision in numerous areas of FS;</p> <p>Professional development opportunities and support have been unavailable.</p> |

| Benchmark | <i>85% or more responses comprising 'strongly agree or agree'</i> | <i>75% or more responses comprising 'strongly agree or agree'</i> | <i>65% or more responses comprising 'strongly agree or agree'</i> | <i>55% or more responses comprising 'strongly agree or agree'</i> | <i>less than 55% Responses comprising 'strongly agree or agree'</i> |
|---|---|---|---|--|--|
| Component 3 | | | | | |
| Capstone Experience (Internship) | Student exhibits skill set commensurate with their post-graduate professional setting when evaluated by faculty and external peer-review. | Student exhibits skill set acceptable in post-graduate professional setting when evaluated by faculty and external peer-review; Some minor areas of professional development or intellectual base are lacking. | Student exhibits skill set that would require some development in post-graduate professional setting when evaluated by faculty and external peer-review; Several areas of professional development or intellectual base are lacking. | Student exhibits skill set that would require significant remediation in post-graduate professional setting when evaluated by faculty and external peer-review; Major areas of professional development or intellectual base are lacking. | Student exhibits skill set that would be unacceptable in post-graduate professional setting when evaluated by faculty and external peer-review; Professional development or intellectual base are not adequate. |
| Benchmark | <i>Achievement of A grade in Capstone Course or 80% pass rate if pas/fail</i> | <i>Achievement of B grade in Capstone Course or 70% pass rate if pas/fail</i> | <i>Achievement of C grade in Capstone Course or 60% pass rate if pas/fail</i> | <i>Achievement of D grade in Capstone Course or 50% pass rate if pas/fail</i> | <i>Achievement of F grade in Capstone Course or less than 50% pass rate if pass/fail</i> |

3. MSFS Graduate Performance, assessed per rubric.

3.1. Student Capstone Summary.

| Student | Internship Location | Title | Peer Reviewers | Publication-standard paper | Degree of agreement between peer reviewers | Oral Presentation | Degree of agreement between peer reviewers |
|---------|---------------------|---|---|----------------------------|--|-------------------|--|
| SAS | CUH/CIL | Metric analysis of the sagittal suture: An examination of suture Length as it relates to ancestry and sex | Dr Lee Goff Dr R. Mann* W. Sullivan | Pass | 100% | Pass | 100% |
| JB | CUH | A preliminary investigation of DNA degradation and its relation to forensic sciences | Dr Lee Goff* Dr H. Turner W. Sullivan | Pass | 100% | Pass | 100% |
| AF | CUH | Comparison of decomposition patterns of hanging carcasses exposed in direct sunlight and in shade on the Island of Oahu, Hawaii | Dr Lee Goff* W. Sullivan | Pass | 100% | Pass | 100% |
| SH | CUH | Comparison of bloodstains found on clothing | Dr Lee Goff W. Sullivan* | Pass | 100% | Pass | 100% |
| BJ | FBI | Methodologies for developing latent fingerprints on human skin | Dr Lee Goff W. Sullivan FBI supervisor* | Pass | 100% | Pass | 100% |
| TO | CUH | The effects of methamphetamine on Maui and the heart | Dr Lee Goff* W. Sullivan | Pass | 100% | Pass | 100% |
| NS | Honolulu ME | Chloride levels of sphenoid sinus fluid in salt and fresh water drowning cases | Dr Lee Goff W. Sullivan Dr G. Suzuki* | Pass | 100% | Pass | 100% |
| JS | Honolulu ME | Infectious agents in infant deaths: Case reviews from the Honolulu Medical Examiner's Office. | Dr Lee Goff W. Sullivan Dr B. DeAlwis* | Pass | 100% | Pass | 100% |

| | | | | | | | |
|------------------------------|-----|---|-----------------------------|-------------|-------------|-------------|-------------|
| KW | CUH | Development of an alternative method for measuring angles of impact for well-formed bloodstains | Dr Lee Goff W. Sullivan* | Pass | 100% | Pass | 100% |
| Pass Rate | | | | 100% | | 100% | |
| Inter-rater agreement | | | | | 100% | | 100% |

* internship supervisor

CIL: Central Identification Laboratory

ME: Medical Examiner

FBI: Federal Bureau of Investigation

3.1. Performance rating per rubric

Exemplary: Achievement of A grade in Capstone Course or 80% pass rate if pass/fail

3.2. Reflection and Action Plan.

Faculty reflection and action points are summarized below:

- During period 2009-2010 gather additional data using Divisional Exit Instrument, so that capstone examination performance can be assessed in a significant number of MSFS graduates;
- Graduation and success rate of MSFS students in the internship capstones is commensurate with the impressions of Faculty and external supervisors. Students are achieving at a high level in a challenging course, where preparation of a publication quality paper and a professional-level oral presentation are required.
- the number of peer reviewers could usefully be increased, and so Faculty may well invite more participants from other CUH science disciplines, as well as external agencies, to participate in review.
- Some research papers (e.g. BJ, NS, above) have been prepared for submission to a professional peer-reviewed journal, or at a national FS meeting. Such attainments should be recorded as further evidence of the quality of graduating students from the MSFS program.
- Overall the MSFS program is young, and assessment is by definition growing as the program grows. However, appropriate tools are in place and are being implemented. The upcoming (2010) application for accreditation to FEPAC will also generate more data and tool, especially in relation to post-graduate destinations, that will be incorporated into the assessment plan.