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# The Appropriate Educational Background for Entry Level Forensic Scientists: A Survey of Practitioners

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**ABSTRACT:** To assess the need to modify its forensic science degree programs, the School of Criminal Justice at Michigan State University surveyed some of its own students majoring in Forensic Science, the forensic scientists working for the Michigan State Police, and the membership of the American Society of Crime Lab Directors. The results of the surveys showed the educational background most preferred for a career in forensic science would consist of a B.S. degree which has a major chemistry component and a Master of Science in Forensic Science. Personal comments sent back with some of the surveys also suggested the need for a strong background in chemistry. Survey results and personal comments also showed a general disdain for the B.S. in Forensic Science as the terminal degree unless it has a strong hard science component.

**KEYWORDS:** forensic science, symposium, education, surveys

The School of Criminal Justice at Michigan State University, East Lansing, Michigan, presently offers the Bachelor of Science in Forensic Science as its major program in this field. The School also has a few graduate students who study Forensic Science as part of the Master of Science in Criminal Justice program. In the Spring of 1986, the School embarked upon an evaluation of its Forensic Science offerings with an eye towards upgrading the curricula. A number of possible changes were originally identified which had the potential of increasing the quality of the School's program. They included:

1. Enhance the number and depth of courses in Forensic Science and the physical sciences in the present undergraduate program.
2. In place of the present undergraduate program, create a five-year program leading to the Master of Science in Forensic Science (MSFS). The undergraduate component of the program would be essentially a double major in chemistry and criminal justice.
3. In place of an undergraduate program in forensic science, establish a Master of Science degree in forensic science. Entry requirements would include a B.S. or B.A. in a physical or natural science or forensic science.

One of the measures that the School has traditionally used in determining the appropriateness of the curricula of its Forensic Science programs is the continued employability of graduates of the program. In this regard, special attention is paid to how MSU's graduates

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in Forensic Science fare in competition with graduates from other undergraduate programs in Forensic Science as well as those who graduate with degrees in other disciplines. To help determine if changes were warranted in the curriculum of the program, the School undertook a series of surveys of its own undergraduate majors in Forensic Science as well as selected members of the forensic science profession. The populations which were surveyed are as follows:

(1) 23 junior and senior undergraduate students who declared Forensic Science as their major and who have taken or were taking the undergraduate Forensic Science course sequence at the time of the survey,

(2) 125 forensic scientists (including supervisors) employed by the Michigan State Police, Forensic Science Division, and

(3) 240 members of the American Society of Crime Lab Directors (ASCLD).

The student survey gave the students several educational alternatives in forensic science and asked them to choose which one they would prefer to pursue if they were just starting out in the Forensic Science major. The forensic scientists employed by the Michigan State Police were asked to choose the most desirable educational background for a prospective entry level forensic scientist. The crime lab directors were asked to choose what type of educational background they would most prefer to see in a prospective entry level forensic scientist in one of the "hard" science sections of their laboratory.

## Results

The results for each of the surveys are in Tables 1 through 3. In each case the numbers within each category represent the percent of respondents who gave that answer. The totals of the numbers do not add up to 100% in all cases because some survey instruments had duplicate choices for one preference level or duplicate preferences for one choice or because some categories were left blank. In all cases where the respondents were asked to rank their choices, "1" represents the most preferred choice and higher numbers represent successively less preferred choices.

## Discussion

Taken as a whole, these surveys suggest a number of things concerning the educational backgrounds of prospective forensic scientists.

First, there is a strong preference for a Masters degree in Forensic Science among all three populations surveyed. In the case of the students, 87% preferred the MSFS either after a BS in Forensic Science or as part of a five-year program. The survey of the MSP forensic scien-

TABLE 1—*Survey of forensic science majors.* n = *23.*

| | Level of Preference | | | | Weighted Average (1-4 Scale) |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | |
| Present B.S. program with some additional electives | 8.6 | 30.4 | 39.1 | 8.7 | 2.55 |
| B.S. in F.S. plus M.S. in F.S. | 43.5 | 30.4 | 8.7 | 4.3 | 1.70 |
| Five-year program leading to MSFS | 43.5 | 21.7 | 4.3 | 17.3 | 1.95 |
| Present B.S. in F.S. program | 4.3 | 0 | 26.1 | 56.5 | 3.55 |

TABLE 2—*Survey of MSP forensic scientists.* n = *90.*

| Choice | Highest Degree Preferred, % |
|---|---|
| B.S. or B.A. in Physical or Biological Science | 18.8 |
| B.S. in Criminalistics/Forensic Science | 8.4 |
| B.S. or B.A. in Criminal Justice | 1.8 |
| M.S. in Physical or Biological Science | 25.5 |
| M.S. in Forensic Science | 39.6 |
| M.S. in Criminal Justice | 0.9 |
| Other degrees | 4.7 |

tists also indicated a preference for the MSFS although it was not as strong. Nearly 40% of the responses indicated that the MSFS would be most preferred. In addition, another 26% indicated preference for a Masters degree in another science, making a total of nearly two thirds of the respondents indicating the need for some type of "hard" science Masters degree.

The results of the survey of the ASCLD membership were similar. Almost 68% of the respondents preferred the MSFS either after an undergraduate degree in forensic science. after an undergraduate degree in a physical or natural science (the "other" category), or as part of the five-year program. Another 11% favored the Masters degree in a physical or natural science. This means that over three quarters of the crime lab directors preferred some type of Masters degree as most desirable in a prospective forensic scientist.

Another result of the surveys which stands out is the lack of preference for the B.S. in Criminalistics/Forensic Science compared to other alternatives among both the MSP scientists and the crime lab directors. For example, the B.S. in Forensic Science ranked well behind a B.S. in a physical or biological science as well as the M.S. in either forensic science or a physical or biological science among the Michigan State Police forensic scientists. In the case of the crime lab directors, the choice of the B.S. in Forensic Science ranked last among the seven alternatives presented. One third of the respondents rated it the least attractive of all the choices. Many personal comments sent back with the surveys by crime lab directors gave a clue to a reason for this. Those who commented stated that they felt that too many programs passing themselves off as forensic science programs were actually little more than criminal justice programs with a forensic science internship and a smattering of "hard" sci-

TABLE 3—*Survey of ASCLD membership.* n = *153.*

| | Preference Level | | | | | Weighted Average (1-5 Scale) |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | |
| B.S. in F.S./Crim. | 7.1 | 13.7 | 15.0 | 18.3 | 33.9 | 3.67 |
| B.S. in Phys./Biol. Science | 12.4 | 16.3 | 13.1 | 22.9 | 19.6 | 3.01 |
| Five-year program leading to MSFS | 26.7 | 26.1 | 22.2 | 6.2 | 5.2 | 2.26 |
| B.S. + M.S. in F.S. | 25.4 | 17.6 | 22.2 | 15.7 | 7.1 | 2.56 |
| B.S. + M.S. in Phys./Biol. Sci. | 11.7 | 28.1 | 18.3 | 14.3 | 6.2 | 2.58 |
| Other[a] | 16.3 | ... | ... | ... | ... | ... |

[a]These were all "write-ins" and specified the Bachelors degree in chemistry followed by the MSFS.

ence. This suggests that a prospective forensic scientist's transcript and credentials need to be scrutinized to see what specific courses were contained in the degree program. This is true whether the program awards the B.S. or the M.S. in Forensic Science since there is apparently little uniformity among programs which call themselves forensic science.

Another result that is suggested by the crime lab directors' survey and is bolstered by personal comments sent back with the surveys is the need for more chemistry in the backgrounds of prospective forensic scientists. The "other" category in the lab directors' survey consisted of a B.S. in Chemistry followed by the M.S. in Forensic Science. It garnered 16.3% of the responses in the "most preferred" category, third behind the five-year program leading to the M.S. in Forensic Science and the B.S. + M.S. in Forensic Science. This category was supplied by the lab directors themselves who specifically mentioned chemistry as the preferred undergraduate degree.

In summary, these surveys suggest that the model for Michigan State University's forensic science program should consist of an undergraduate program which emphasizes chemistry followed by a graduate M.S. program in forensic science. This offering seems to conform best to what all three surveys suggest.

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