ASCP Board of Registry's 2006 Annual Survey of Medical Laboratory Science Programs

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Until 2004, the American Society for Clinical Pathology Board of Registry (ASCP BOR) conducted an annual survey of medical laboratory science programs accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and the Commission on Accreditation of Allied Health Education Programs (CAAHEP). This survey examined 1) the quality and quantity of the applicants to accredited educational programs; 2) the number of program graduates and the number of graduates who find employment or enter a graduate or professional program immediately after graduation; and 3) changes in the structure and operation of these educational programs. After a 2-year lapse, the ASCP BOR has again reinstituted this survey.

Methods

Surveys were sent in electronic format to program directors of NAACLS- and CAAHEP-accredited programs (both approved and pending approval) in 690 programs. (International medical technologist and international medical laboratory technician designations were excluded, as well as technologist in molecular pathology programs.) An interactive, electronic survey was used to request information about Program Type: Cytotechnology (CT), Histotechnician (HT), Histotechnologist (HTL), Medical Laboratory Technician (MLT), Medical Technologist (MT), Pathologists' Assistant (PA), Phlebotomy (PBT), and Specialist in Blood Banking (SBB). The survey requested information regarding the status of the program (Active, Inactive, or Discontinued) and the program base (Hospital/Medical Center/Blood Bank, University/College, Independent Laboratory, Community College, Military Facility, or Other). After identifying the program, directors were asked how many classes of students were graduated, the total number of students initially enrolled in these classes, and the total number of students who graduated. Directors were then asked to indicate whether there was an Increase, Decrease, or No Change in the Number and Quality of students. The survey went on to ask about what percentage of 2006 graduates sought employment and what percentage got employment in medical laboratories. The directors were then asked what their expectations were for changes in the upcoming year (Decrease or Increase in Class Size, possibility of Program Discontinuation, or Other [with space for specifying what this might be]). Space was provided at the end of the survey for any comments the directors wished to provide.

In order to avoid artificial deflation of the numbers, when the averages for class size, number enrolled, number of graduates, percentage seeking employment in the laboratory field, and percentage gaining employment in medical laboratories were computed, the programs that had no students or graduates were excluded from the calculations. For this reason, the employment rate reported below is based solely on graduates who actually sought employment according to the program directors who responded to this survey.

Following the layout of the previous surveys, in order to study any regional differences, the programs were divided into 10 regions. This division is based solely on the first digit of the program's zip code.

The first digit of the zip code is allocated as described below. The number of responses from that area is listed after the specification of which states, etc, constitute the area and the percentage of total responses (N=443).

0 = Connecticut, Massachusetts, Maine, New Hampshire, New Jersey, Puerto Rico, Rhode Island, Vermont, Virgin Islands, APO Europe, FPO Europe; n=33, 7.4%.
1 = Delaware, New York, Pennsylvania; n=39, 8.8%.
2 = District of Columbia, Maryland, North Carolina, South Carolina, Virginia, West Virginia; n=62, 14.0%.
3 = Alabama, Florida, Georgia, Mississippi, Tennessee, APO Americas, FPO Americas; n=55, 12.4%.
4 = Indiana, Kentucky, Michigan, Ohio; n=62, 14.0%.
5 = Iowa, Minnesota, Montana, North Dakota, South Dakota, Wisconsin; n=47, 10.6%.
6 = Illinois, Kansas, Missouri, Nebraska; n=46, 10.4%.
7 = Arkansas, Louisiana, Oklahoma, Texas; n=65, 14.7%.
8 = Arizona, Colorado, Idaho, New Mexico, Nevada, Utah, Wyoming; n=13, 2.9%.
9 = Alaska, American Samoa, California, Guam, Hawaii, Northern Marina Islands, Oregon, Washington, APO Pacific, FPO Pacific; n=21, 4.7%.

As is the case with the zip codes in general, this distribution should not be construed as having any special meaning beyond proximity of location. It has no implicit value other than similarity of location.

Responses

The results presented here represent the answers given by 443 program directors, a 64% return rate (**Table 1**). This is lower than the return rate from the previous 2004 survey (approximately 73%). There are several speculations about why the return rate declined. These include the fact that the survey was electronic rather than paper. It was hypothesized that this may have decreased the survey responses. Another hypothesis was that the request was sent electronically, rather than by mail. It was speculated that because program directors receive so much e-mail, they might not have paid attention to this. Another hypothesis was that because surveys were sent around the time of the traditional spring break, program directors may not have received them or may not have noticed them. However, because the survey was conducted over a 3-month period, with reminders sent to those directors who had not yet responded, this seems unlikely.

Among the 443 responses received from program directors, 436 (98.4%) were from active programs, 1 (0.2%) was from an inactive program, and 2 (0.5%) were from discontinued programs. Four (0.9%) of the responses were blank. One of the discontinued programs was at a community college and the other was at a university/college. The inactive program was at a hospital/medical center/blood bank.

There was a great deal of variability in responses by different programs (**Table 1**). The lowest number (2) and percentage (13.3%) of responses was for the HTL program. The largest overall response rate, in percentage, was the Pathologists' Assistant program at 71.4%, although this is only 5 responses from a total of 7 programs. Among the 2 largest programs, MT and MLT, the response rates were 71.0% and 68.6%, respectively.

Distribution of Programs: According to the responding program directors (**Table 2** and **Figure 1**), Community colleges account for the largest percentage of people trained by accredited programs in MLT (39.1%, n=173) followed by universities/colleges, with 28.73% (n=127). Closely behind are hospitals/medical centers/blood banks (28.05%, n=123). Very distantly behind come other (2.94%, n=13), military facilities (0.90%, n=4), and independent laboratories (0.45%, n=3). While the option other was selected by a few program directors (**Table 2**, **Figure 1**, and **Figure 2**), there was no particular pattern that indicated any meaningful continuity to this choice.

The breakdown of where a program is based is quite different when individual programs are examined (**Figure 2**). For example, the HTL programs are evenly split between hospitals/medical centers/blood banks and universities/colleges. Histotechnician programs, on the other hand, show the largest number in community colleges (36.8%), and then a tie between universities/colleges and hospitals/medical centers/blood banks, at 26.3% each. After that come independent laboratories and military facilities, also tied at 5.3% each. Community colleges account for the largest percentage, by far, of the MLT programs (84%) and PBT programs (70%). Hospitals/medical centers/blood banks, understandably, account for the largest percentage of the SBB programs. Interestingly, MLT programs and HT programs each have 5 different program bases, although not the same ones (MLT has everything but independent laboratories, while HT has everything but other). Cytotechnology, MT, PBT, and SBB programs each have 4 bases. Medical laboratory technician and PA programs both have 2 bases. In their cases, these are universities/colleges and hospitals/medical centers/blood banks, exclusively.

Table 1_Program Director Responses by Total Number of Accredited Programs

Program	Number of Programs	Number of Responses	Percent Response
CT	52	31	59.6
HT	49	19	38.8
HTL	15	2	13.3
MLT	236	162	68.6
MT	248	176	71.0
PA	7	5	71.4
PBT	69	40	58.0
SBB	14	8	57.1
Total	690	443	64.2

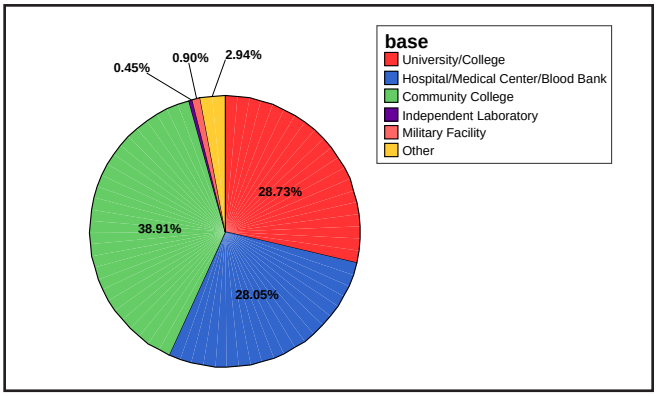

Figure 1_Overall Distribution of Where Programs Are Based.

Table 2_Breakdown of Responding Directors by Programs

	Community College	Hospital	Independent Laboratory	Military Facility	Other	University	Total (%)
CT		13		1	1	16	31 (7.0)
HT	7	5	1	1		5	19 (4.3)
HTL		1				1	2 (0.5)
MLT	136	2		1	7	16	162 (36.6)
MT	1	94	1		2	78	176 (39.7)
PA	1	1			3	5 (1.1)	
PBT	28	3			2	7	40 (9.0)
SBB		5		1	1	1	8 (1.8)
Total (%)	173 (39.1)	123 (27.8)	3 (0.7)	4 (0.9)	13 (2.9)	127 (28.7)	443

Results

Overall

Before looking at the specific breakdown for each category on the survey, it is helpful to examine the general tendencies for the program directors. According to the survey, 82.88% of the graduates sought work in laboratories (n=375). Interestingly, the program directors also report that 83.85% (n=360) found work in laboratories. This implies that there are more jobs available than people who are looking for them. This would seem to be consistent with tendencies that have been observed recently by the ASCP BOR.

According to the responses, there was an average of 1.6 classes per program in 2006. The average initial number of students per class is 16.56, but the average total number of students per class is 12.51. This would tend to indicate that there is a decrease of about 4 students (25%) in class size from beginning to graduation.

Graduating Class Size

By far, 1 class graduating per year was the largest (n=325, 73.4%). Coming in a distant second is 2 classes (n=52, 11.7%). Next, dropping almost by half, is 3 classes (n=28, 6.3%). Four classes is the last with more than 2 percent (n=11, 2.5%). The other graduating class numbers range from 6 (n=6, 1.4%) to 16 (n=1, .2%) graduating classes per year. It is interesting to note (**Table 3**) that 7 programs (1.6%) reported that they had no graduating classes in 2006.

Number of Students

Initial Number: No particular class size is overwhelmingly more frequent than any other particular class size (**Table 4**). Overall, 61 different class sizes are reported (although 1 of them was reported as "?" by a program director [**Table 4**]). The largest class size of students initially enrolled in a class is 293 for 1 program (it is unclear whether this is actually the size of a single class or the size of the total enrollment for a program). The class

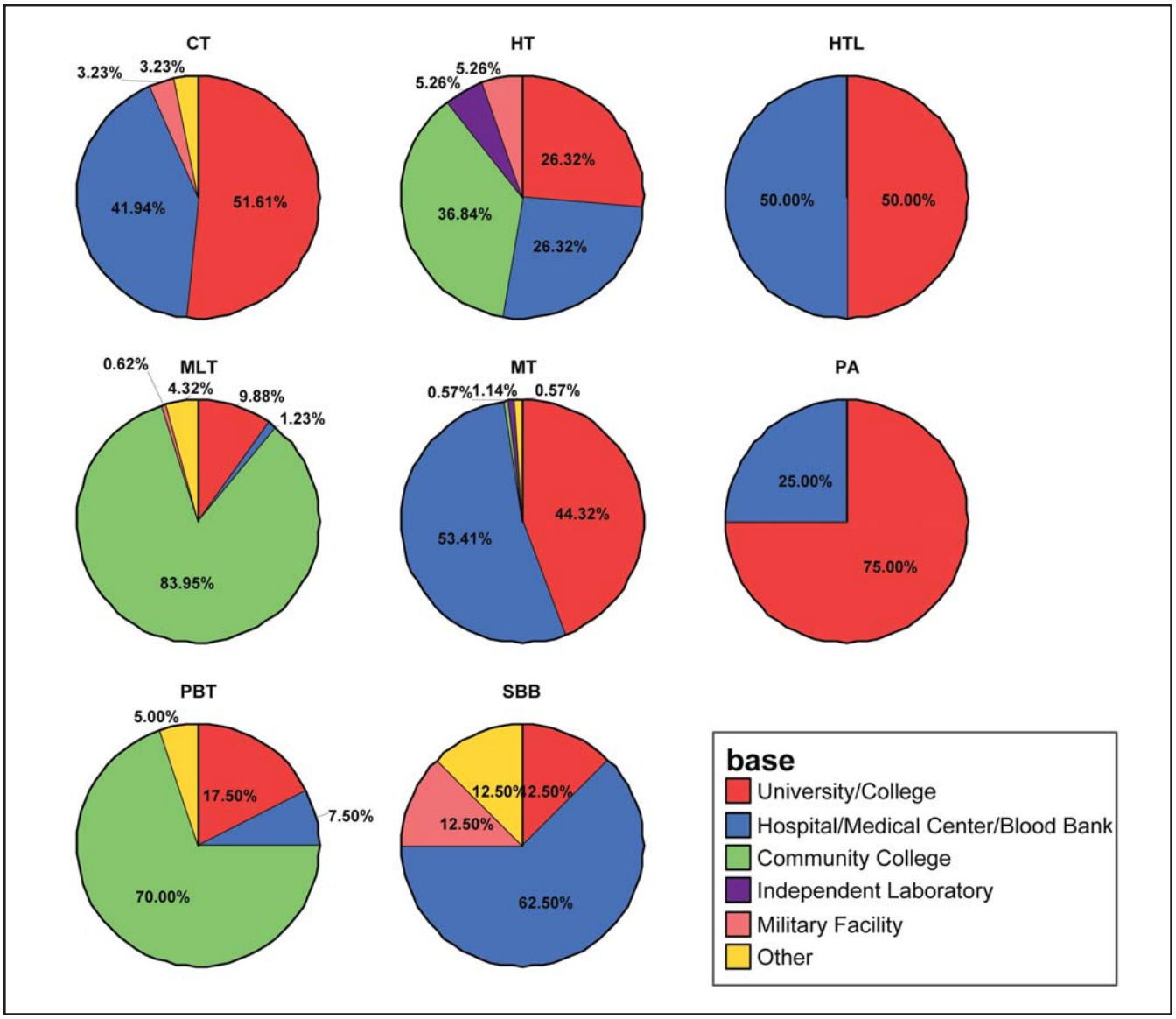

Figure 2_Breakdown of Program Base by Program.

Table 3_How Many Classes were Graduated in 2006?

Number of Graduating Classes	Frequency (n)	Percent
0	7	1.6
1	325	73.4
2	52	11.7
3	28	6.3
4	11	2.5
5	5	1.1
6	6	1.4
7	1	0.2
8	2	0.5
9	1	0.2
10	1	0.2
15	2	0.5
16	1	0.2
n/a*	1	0.2
Total	443	

**This was entered by a program director. It is unclear whether this means that there were no graduating classes or no program.*

size with the greatest frequency is 6 (n=37, 8.4%). The number of students initially enrolled in a class ranges from 1 (which 2 schools report) to the aforementioned 293. Following the class size of 6 students in frequency were those with 4 students (n=31, 7%). Next were those with 5 or 8 students (n=30, 6.8%), then those with 10 students (n=20, 4.5%). The next largest is a 3-way tie between class sizes with 3, 7, and 14 students (n=18, 4.1%). Class sizes with 11, 12, 13, and 16 students are next, with 3.2% (n=14) each.

Total Number: Like the initial number of students in a class, the total number of students fluctuates (**Table 5**); however, it does not have as great a variety of sizes as the initial enrollment size. The range of sizes is from 0 to 222 students, with 47 different class sizes reported (again, as with initial enrollment, it is unlear whether some of the higher totals are for class sizes or total number in a program). As with initial enrollment size, the total number with the highest frequency are those with 6 students (n=47, 10.6%). The next largest are those with 8 students (n=35, 7.9%). After this, there is a 3-way tie between those with 4, 5, and 10 students (n=32, 7.2%). Class sizes with 7 students (n=31, 7.0%) follow, then those with 3 (n=27, 6.1%), then those with 11 (n=24, 5.4%), and then a tie between class sizes with 9 and 12 students (n=20, 4.5%).

Students: A number of questions within the survey inquired whether there were increases, decreases, or no change in both the number and quality of students in 2006. Overall, among the respondents (n=443), 16.3% of the program directors (n=72) reported that there was a decrease and 37.7% (n=167) reported an increase in the number of students in their respective programs. The remaining 42.9% (n=190) indicated there was no change in the number of students in their programs. There is a slight inconsistency in the numbers. Collectively, only 96.9% of the respondents picked increase, decrease, or no change. It is assumed that the unaccounted for 3.1% is an error in entry by some program directors answering the survey.

There is a much larger error in the program directors' answers to the question about changes in the quality of the students. About 13% (12.6%, n=56) of the program directors

Table 4_How Many Students Were Initially Enrolled in Classes in 2006?

Class Size	Frequency (n)	Percent	Class Size	Frequency (n)	Percent
?	1	.2	30	2	.5
0	7	1.6	31	1	.2
1	2	.5	32	3	.7
2	6	1.4	33	2	.5
3	18	4.1	35	1	.2
4	31	7.0	36	3	.7
5	30	6.8	38	2	.5
6	37	8.4	40	3	.7
7	18	4.1	42	3	.7
8	30	6.8	43	1	.2
9	11	2.5	44	1	.2
10	20	4.5	45	4	.9
11	14	3.2	48	1	.2
12	14	3.2	49	1	.2
13	14	3.2	50	1	.2
14	18	4.1	51	1	.2
15	12	2.7	67	1	.2
16	14	3.2	68	1	.2
17	10	2.3	72	1	.2
18	12	2.7	75	2	.5
19	6	1.4	80	2	.5
20	11	2.5	85	1	.2
21	2	.5	89	1	.2
22	5	1.1	96	1	.2
23	10	2.3	100	1	.2
24	13	2.9	103	1	.2
25	9	2.0	138	1	.2
26	8	1.8	160	1	.2
27	5	1.1	293	1	.2
28	4	.9	Total	443	
29	3	.7			

specified there was a decrease in the quality of the students, about 21% (20.5%, n=91) indicated there was an increase in the quality of the students, and 40% (n=177) indicated there was no change in the quality of the students. This means that only 73.13% of the total (n=443) answered this question consistently. Because everyone answered each question, this suggests that 26.87% of the respondents gave more than 1 answer to this question (ie, showed no change and increased quality, or increased quality and decreased quality, simultaneously). For this reason, these results must be viewed guardedly.

Work in Laboratories: The survey had 2 questions about the percentages of 2006 graduates and work in laboratories. The first question asked the program directors what percent of the 2006 graduates *sought* work in laboratories, while the second question asked what percentage of the 2006 graduates *got* work in laboratories.

Among those program directors who answered this question (n=431, 97.3% of the total), the percent who sought work in laboratories ranges from 0 (n=4, 0.9%) to 100 (n=248, 57.5%). By far, the most frequent percentage indicated was 100%. This means that for about 58% of the classes, all of the students sought work in laboratories. After this, the next highest percentage was 90% (n=15). As single percentages, the results after this are negligible. For the sake of continuity, the survey results have been combined into 10% increments (**Table 6**).

The most surprising thing about this is that 10% of the classes had 10% or fewer students seeking work in laboratories. Collectively, 56 (12.99%) of the program directors who answered this questionnaire had fewer than 50% of the classes looking for work in laboratories.

The percentage who got work in laboratories (**Table 7**) is similar to, but higher than, those who sought work in laboratories. The largest percent, as expected, is 100% (n=265, 61.6%). The next highest percentage is a tie between 90% and 80% (n=13, 3% of total). As with the percentage who sought work, there is a slightly higher number of program directors (n=13) who did not answer this question.

Collectively, more students got work than sought work; however, this needs to be viewed with caution. It is quite possible that some of the students were already employed and, thus, would not seek work but would be employed after graduation. This may account for the relatively higher numbers in **Table 7** than in **Table 6**.

Table 5_Total Number of Students

Class Size	Frequency (n)	Percent
0	7	1.6
1	6	1.4
2	11	2.5
3	27	6.1
4	32	7.2
5	32	7.2
6	47	10.6
7	31	7.0
8	35	7.9
9	20	4.5
10	32	7.2
11	24	5.4
12	20	4.5
13	9	2.0
14	8	1.8
15	8	1.8
16	8	1.8
17	9	2.0
18	4	.9
19	8	1.8
20	5	1.1
21	5	1.1
22	4	.9
23	6	1.4
24	3	.7
25	6	1.4
26	3	.7
27	1	.2
29	1	.2
31	3	.7
33	4	.9
35	3	.7
36	2	.5
38	1	.2
42	1	.2
45	3	.7
48	1	.2
59	1	.2
60	1	.2
70	2	.5
72	1	.2
73	1	.2
75	2	.5
101	1	.2
152	1	.2
222	1	.2
Total	443	

Table 6_What Percent of 2006 Graduates Sought Work in Laboratories?

Percent Sought Lab Work	Frequency (n)	Percent
0 to 10	43	10.0
11 to 19	6	1.4
20 to 29	2	0.5
30 to 39	4	0.9
40 to 49	1	0.2
50 to 59	8	1.9
60 to 69	9	2.1
70 to 79	18	4.2
80 to 89	47	10.9
90 to 99	45	10.4
100	248	57.5
Total	431	

Table 7_What Percent of 2006 Graduates Got Work in Laboratories?

Percent Sought Lab Work	Frequency (n)	Percent
0 to 10	40	9.3
11 to 19	5	1.2
20 to 29	4	0.9
30 to 39	4	0.9
40 to 49	2	0.5
50 to 59	9	2.1
60 to 69	7	1.6
70 to 79	12	2.8
80 to 89	43	10.0
90 to 99	39	9.1
100	265	61.6
Total	430	

Class Size: Another question asked whether there were increases or decreases in class size. Nine percent (n=40) of the program directors said there was a decrease in class size, and 31.8% (n=141) indicated there was an increase in class size. Although it was not asked directly, from these responses it can be inferred that 59.1% of the classes are the same size. This is consistent with the results regarding the increase or decrease in the number of students attending programs (**Table 4** and **Table 5**).

Program Discontinuance: Among the total number of program directors who responded to this survey, 7 (1.6%) indicated that it was possible that their programs would be discontinued. Analysis of discontinuance did not show that this possibility was related to any region or other program characteristic, although region 2 had twice as many possible program discontinuations (2) as the others that had them at all (regions 0, 4, 5, 7, and 8).

Regional Analysis

As mentioned in the beginning of this report, the previous reports did a regional breakdown of responses. Regions are defined by the first digit of their states' zip codes. The distribution of the states by their zip code digit is defined above.

In general, a comparison in both the number of students and the quality of students by region (**Table 8**) shows more increase than decrease. Overall, the ratio of increase to decrease in the number of students is 2.31 to 1. That is, more than 2 times as many programs are showing an increase in the number of students than a decrease in the number of students. This holds true for each region, varying from a low of 1.33 in New England and New Jersey (region 0) to a high of 6.0 in the West (region 9). In student quality, the ratio of increase to decrease is lower; overall, the ratio is 1.65 to 1. Interestingly, region 0 shows a larger decrease in student quality than an increase, 0.67. The largest ratio is in region 9, 6.0. However, it must be noted that these are small numbers of program directors who are reporting increases or decreases in student quality in their programs. For example, the largest number of reported increases or decreases for a region is 13 (regions 3 and 4). The smallest number is 1 (region 9), indicating a decrease in student quality.

Class size shows a relatively large overall ratio (3.525 to 1) of increases over decreases. The smallest ratio is in region 5 and the largest is in either region 9 (if you count 0 for decreases, which creates an infinite ratio) or region 3 at 11 to 1. Again, the fact that these are small numbers must be taken into account before any generalizations are made. Indeed, from the survey responses, it may be more appropriate to conclude that there were no changes in number or quality of students or in class sizes in 2006.

This is borne out by the statistical comparison of these 10 regions for each of these categories. In all cases, there is no statistically-significant difference between regions. For example, the statistical comparison for decreases in the number of students by region, $\chi^2_9 = 8.416$, $p = 0.493$, shows no notable difference. The same is true for a comparison of increases in the number of students, $\chi^2_9 = 10.719$, $p = 0.295$. The region comparison for decreases and increases in quality of students is similar: $\chi^2_9 = 8.615$, $p = 0.474$ and $\chi^2_9 = 4.521$, $p = 0.874$, respectively. The comparison of increases in class size comes closest to showing a significant difference between regions, $\chi^2_9 = 11.273$, $p = 0.257$, although the difference is not that close to the usual significance criterion level (p) of 0.05 or 0.01. The comparison in decreases of class size also shows no noticeable difference, $\chi^2_9 = 7.147$, $p = 0.622$.

The last comparison involves the possibility that a program may be discontinued. Overall, as mentioned above, the program directors reported that 7 programs might end. The largest reported number, 2, was in region 2, the "Upper" South. Four regions reported 0 discontinuations and 4 reported 1 possible discontinuation. Again, the statistical analysis, $\chi^2_9 = 7.352$, $p = 0.603$, showed no significant difference between regions in program closings. While this is not a large number, it is still a cause for concern.

Programs

The last major section in this report is about the regions of the United States, as defined by the first digit of the zip code, and specific programs in medical laboratory sciences. It should be noted that the totals reported in all of these regional analyses (**Tables 9** to **16**) are calculated by excluding blanks (no answer) or 0 from the averages.

Cytotechnology: Probably the most noteworthy finding of this survey regarding CT is that there is such a discrepancy in employment between regions (**Table 9**). The states of New York, Pennsylvania, and Delaware, combined (region 1), have more classes than any other area and have a larger class size than other areas (except region 7, with which they are tied). Region 4

Table 8_Regional Comparison of Increases and Decreases in Number and Quality of Students, Class Size, and Expectations of Program Discontinuation in 2006

Region	Number of Students		Quality of Students		Class Size		Program Discontinue
	Decrease	Increase	Decrease	Increase	Decrease	Increase	
0	9 (2.0%)	12 (2.7%)	6 (1.4%)	4 (0.9%)	4 (0.9%)	12 (2.7%)	1 (0.2%)
1	7 (1.6%	16 (3.6%)	4 (0.9%)	8 (1.8%)	5 (1.1%)	12 (2.7%)	0 (0%)
2	6 (1.4%)	22 (5.0%)	8 (1.8%)	11 (2.5%)	6 (1.4%)	15 (3.4%)	2 (0.5%)
3	10 (2.3%)	26 (5.9%)	6 (1.4%)	13 (2.9%)	2 (0.5%)	22 (5.0%)	0 (0%)
4	7 (1.6%)	19 (4.3%)	3 (0.7%)	13 (2.9%)	7 (1.6%)	21 (4.7%)	1 (0.2%)
5	7 (1.6%)	14 (3.2%)	7 (1.6%)	11 (2.5%)	5 (1.1%)	10 (2.3%)	1 (0.2%)
6	8 (1.8%)	18 (4.1%)	9 (2.0%)	10 (2.3%)	5 (1.1%)	12 (2.7%)	0 (0%)
7	14 (3.2%)	21 (4.7%)	10 (2.3%)	11 (2.5%)	4 (0.9%)	28 (6.3%)	1 (0.2%)
8	2 (0.5%)	7 (1.6%)	2 (0.5%)	4 (0.9%)	2 (0.5%)	3 (0.7%)	1 (0.2%)
9	2 (0.5%)	12 (2.7%)	1 (0.2%)	6 (1.4%)	0 (0%)	6 (1.4%)	0 (0%)
Total	72 (16.3%)	167 (37.7%)	56 (12.6%)	91 (20.5%)	40 (9.0%)	141 (31.8%)	7 (1.6%)

(Ohio, Indiana, Kentucky, and Michigan) had the highest employment rate for their graduates (92%). New England and New Jersey (region 0) had the lowest rate (25%). No one from region 8 (essentially, the Mountain States) responded to the survey. Of course, there is not a large number of CT programs in the United States. In general, programs graduated an average of 2 classes in 2006. These classes had 6 students, 65% of who found work in laboratories. Two of the programs, both in region 2, may be discontinued.

Histotechnician: No program directors from regions 0 and 8 completed the 2006 survey (**Table 10**). The average program in the other 8 regions had 2 classes per year, with 12 students. Ninety-seven percent of the graduates found work in laboratories.

Histotechnology: Only 2 directors with programs in HTL responded to this survey (regions 3 and 4). These programs had 1 class per year comprising 12 students (**Table 11**). All of the graduates of these programs found work in laboratories. None of the reporting programs is concerned about being discontinued.

Medical Laboratory Technician: There was an average of 1 MLT class in 2006 (**Table 12**). This class had an average of 18 students, 85% of who were employed in laboratories after gradu-

Table 9_Cytotechnologists (CT)

Region	Average Number of Classes Graduated	Average Number of Students	Average Percent of Students Who Got Work in a Laboratory	Number of Programs That May Be Discontinued
0	2	6	25	0
1	4	7	60	0
2	1	6	90	2
3	1	7	62	0
4	2	4	92	0
5	3	6	89	0
6	2	4	68	0
7	1	8	51	0
8	0	0	0	0
9	2	6	52	0
Total*	2	6	65	2

*Excluding blanks

Table 10_Histotechnicians (HT)

Region	Average Number of Classes Graduated	Average Number of Students	Average Percent of Students Who Got Work in a Laboratory	Number of Programs That May Be Discontinued
0	0	0	0	0
1	1	9	100	0
2	2	29	98	0
3	1	17	94	0
4	1	14	100	0
5	2	3	100	0
6	2	2	100	0
7	1	7	93	0
8	0	0	0	0
9	1	10	93	0
Total*	2	12	97	0

*Excluding blanks

Table 11_Histotechnologists (HTL)

Region	Average Number of Classes Graduated	Average Number of Students	Average Percent of Students Who Got Work in a Laboratory	Number of Programs That May Be Discontinued
0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	1	19	100	0
4	1	4	100	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
Total*	1	12	100	0

*Excluding blanks

ation. Region 0 had the highest employment rate (98%) and region 1 had the lowest (71%). Two (regions 0 and 8) reported that a program for MLT may be discontinued.

Medical Technologist: Medical Technologist programs had an average of 12 students in each of 2 classes in 2006. Region 0 had the lowest percentage of laboratory employment among its graduates (74%). Region 5 had the highest (98%). Like MLT, there are 2 programs in MT that may be discontinued; however, they are in different regions than the MLT programs.

Pathologists' Assistant: This is a new program, at least for this report. As shown in **Table 14**, 4 (regions 0, 2, 4, and 6) of the 7 accredited programs (**Table 1**) responded to the survey. There was an average of 1 class, with 13 students, in 2006. The employment rate is 98%, with only 1 program (region 4) having less than 100% employment in laboratories after completion of the program. None of these programs are being considered for discontinuation.

Phlebotomy Technicians: Phlebotomy Technician programs had the largest average number of students (42) of any of the programs completing this survey for 2006 (**Table 15**). There is an average of 3 classes per year, with a range from 2 classes (regions 0, 1, and 5) to 6 classes (region 8). The average employment rate was 59%, with a low of 28% (region 0) to a high of 91% (region 5). None of the program directors completing the survey reported that any of their programs were being considered for discontinuation.

Table 12_Medical Laboratory Technicians (MLT)

Region	Average Number of Classes Graduated	Average Number of Students	Average Percent of Students Who Got Work in a Laboratory	Number of Programs That May Be Discontinued
0	1	12	98	1
1	1	16	71	0
2	1	19	82	0
3	1	19	85	0
4	1	17	93	0
5	1	20	91	0
6	1	13	76	0
7	2	24	82	0
8	1	20	90	1
9	1	15	86	0
Total	1	18	85	2

Table 13_Medical Technologists (MT)

Region	Average Number of Classes Graduated	Average Number of Students	Average Percent of Students Who Got Work in a Laboratory	Number of Programs That May Be Discontinued
0	1	15	74	0
1	1	9	84	0
2	2	10	88	0
3	4	10	89	0
4	1	11	91	0
5	1	9	98	1
6	2	13	87	0
7	2	14	95	1
8	1	27	87	0
9	1	13	90	0
Total	2	12	89	0

Table 14_Pathologists' Assistant (PA)

Region	Average Number of Classes Graduated	Average Number of Students	Average Percent of Students Who Got Work in a Laboratory	Number of Programs That May Be Discontinued
0	1	18	100	0
1	0	0	0	0
2	1	8	100	0
3	0	0	0	0
4	1	8	95	0
5	0	0	0	0
6	1	16	100	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
Total*	1	13	98	0

**Excluding blanks*

Specialist in Blood Banking: Four regions (2, 3, 4, and 7) reported on their programs. There was an average of 1 class and 5 students in 2006 (**Table 16**). The average rate of laboratory employment was 88%. However, this reduction was caused by only 1 region (3), which reported a 53% employment rate after graduation. The other 3 regions reported a 100% laboratory employment rate. One of the programs (region 4) reported that it is being considered for discontinuation.

Discussion

As discussed above, the response rate for this survey is lower than that of previous surveys. As it turns out,[1] this has been the case for a number of years. Whether this can be turned around remains to be seen. Naturally, it is very important that this information is collected and published. The author strongly encourages the program directors to respond to surveys in the future. LM

1. Ward-Cook K, Daniels MG, Gueroguieva J. ASCP Board of Registry's 2001 Annual Survey of Medical Laboratory Science Programs. *Lab Med*. 2002;11:831–836.

Table 15_Phlebotomy Technicians (PBT)

Region	Average Number of Classes Graduated	Average Number of Students	Average Percent of Students Who Got Work in a Laboratory	Number of Programs That May Be Discontinued
0	2	34	28	0
1	2	30	29	0
2	4	38	53	0
3	3	28	83	0
4	3	78	57	0
5	2	19	91	0
6	4	65	60	0
7	3	30	54	0
8	6	75	80	0
9	3	36	53	0
Total*	3	42	59	0

**Excluding blanks*

Table 16_Specialist in Blood Banking (SBB)

Region	Average Number of Classes Graduated	Average Number of Students	Average Percent of Students Who Got Work in a Laboratory	Number of Programs That May Be Discontinued
0	0	0	0	0
1	0	0	0	0
2	1	6	100	0
3	1	5	53	0
4	1	2	100	1
5	0	0	0	0
6	0	0	0	0
7	1	7	100	0
8	0	0	0	0
9	0	0	0	0
Total*	1	5	88	1

**Excluding blanks*