# Causes of Historically Low Abstract Submissions for the ASCLS Annual Meeting

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**ABSTRACT**

The Abstract Review Committee (ARC) has an ongoing objective of encouraging abstract submissions for the American Society of Clinical Laboratory Science's (ASCLS) Annual Meeting. The purpose of this research study was to survey ASCLS members to determine the cause of historically low abstract submissions and how submissions could be increased. An electronic survey was developed and sent to ASCLS members via electronic mail blast. The survey focused on five areas: 1) participant demographics, 2) positives and negatives of the current submission and review process, 3) suggestions for improvement, 4) barriers to participation, and 5) level of attendance at poster and oral presentation sessions at annual meetings. Results of the survey indicated that the foremost reason cited for not submitting an abstract was lack of active research. The ARC believes limited research activity is due to the lack of educational preparedness of educators and practitioners to conduct research.

**ABBREVIATIONS:** ASCLS - American Society for Clinical Laboratory Science, ARC - Abstract Review Committee, MLS - Medical Laboratory Science

**INDEX TERMS:** Research Activities, Research and Development, Peer Review, Research

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According to the 2011-2012 Abstract Review Committee (ARC) Strategic Action Plan, abstract submissions for presentation at the American Society for Clinical Laboratory Science (ASCLS) Annual Meeting have remained low for several years. From 2004 to 2011, the average number of abstract submissions has been less than 50 per year. In 2011, the ARC extended the traditional abstract deadline of January 15th to April 15th in an effort to increase abstract submissions, a strategy that did indeed increase submissions that year. To determine further reasons for the low submission number, the ARC has continued its investigation of the issue, and in 2011 the committee developed a survey in an effort to understand two specific aims. The first aim was to assess why submissions have remained low for many years, and second, how could abstract submissions be increased. The ARC hypothesized that the answer to these specific aims was most likely related to the ability of medical laboratory scientist (MLS) professionals to conduct research.

Laudicina et al (2011) gathered data describing the educational preparation of MLS professionals for conducting research.[1] The investigators developed a three-part online survey that was sent by electronic mail

to 7572 members of the ASCLS and 500 program directors of accredited clinical laboratory programs. The main outcomes were the quantitative and qualitative measures of professional preparation for conducting research. The investigators also collected descriptions of the clinical laboratory programs' research curricula. The results indicated that twenty-two percent of MLS undergraduate programs offer a separate research course in the curriculum while thirty-seven percent of the programs required completion of a research project. The remaining programs that responded to the survey had no research component in their curriculum. In addition, the investigators discovered certain barriers to participation in research for undergraduates such as time limitations, insufficient faculty, and lack of funds. They concluded that since less than one-fourth of MLS undergraduate programs offer a separate research course, the formal educational backgrounds of MLS professionals leave them unprepared and untrained to conduct research. The investigators also noted that of the relatively small number of programs that offer a graduate degree in MLS, not all of them required completion of a research project.

In another article, Laudicina et al (2011) studied the state of research in clinical laboratory science by examining the research engagement and scholarly activities of MLS professionals in different employment settings.[2] They found that 91 of 504 (18%) respondents were required to conduct research, with one to four hours a week dedicated to research by 17% of respondents. Also, the investigators discovered that only a small number of participants had ever served as principle investigator (PI) or co-PI on a grant or as a research team member. Laudicina et al (2011) identified several significant barriers to conducting research for MLS professionals, including lack of funding, time demands, lack of graduate students, and limited or insufficient access to statistical support.[2] The investigators concluded that although MLS professionals were participating in research, major barriers, such as lack of funding, were prevalent across all employment settings.

In a more focused study, Waller, Clutter and Karni (2010) studied the state of research and scholarship of faculty members in clinical laboratory science educational programs.[3] They found that out of 275 respondents, the majority indicated teaching was their primary responsibility and considered it more important than research. More than a third of respondents had not published a peer reviewed article or abstract. The investigators discovered that of the faculty members conducting research, the majority were those with a doctorate degree in a tenure track position. Interestingly, investigators discovered that generally 50% of scholarship in the profession was being performed by only 10% of faculty members.[4]

The purpose of the ARC Strategic Action Plan was to investigate the ongoing reasons for limited abstract submissions to the ASCLS Annual Meeting and to develop a plan for increasing abstract submissions in the future. The ARC developed a survey in the hope of answering questions in five overarching areas. First, what were the educational and certification backgrounds of participants? Second, what were the good and bad points of the abstract submission and review process? Third, how might the onsite oral and poster sessions be improved? Fourth, what are the barriers to participation in abstract submission? Finally, what abstracts sessions were supported or attended by participants at the annual meeting? The ARC believed that these five areas were important for understanding the processes that contribute to presentation in oral and poster sessions. The investigators hypothesized that lack of participation of MLS professionals in research would be a major causative agent for the stagnant number of abstract submissions over the past nine years. Additionally, the ARC believed that low number of abstract submissions were functions of the educational background and preparedness of MLS professionals to conduct research.

## METHODS

To better serve ASCLS members, the ARC developed a fourteen question survey to poll laboratory practitioners regarding the ongoing reasons for limited abstract submissions as well as participation and satisfaction with the abstract submission and review process. Some survey questions were modified, with permission, from surveys used informally in the past by the ARC and other interested parties in ASCLS. Other questions were newly developed specifically for this activity. The questions were specifically designed to gather data in five general categories to address the five areas of concern mentioned previously: 1) demographics 2) positives and negatives of the current system 3)

suggestions for improvement 4) barriers to participation and 5) level of attendance at poster and oral presentation sessions at annual meetings.

The first two questions assessed the education level and certification of the participants in an attempt to categorize their level of preparedness for participation in a research presentation. The next questions divided the participants into two groups: those who had previously submitted abstracts and those who had not. Those who had submitted abstracts previously were asked about their satisfaction with the submission process, how it might be improved, and how they would rate their onsite experience at the Annual Meeting. Those who had not submitted previously were queried about reasons that prevented them from participating.

All survey participants were asked about the society meetings they attended and if they attended poster or oral member-submitted abstract sessions while at those meetings. All participants were also asked to make suggestions about how to improve the overall quality and quantity of abstract submissions and about topics that would peak interest and attendance at these types of sessions.

Participation in the survey was voluntary and anonymous. Survey participants were recruited via electronic mail blast to 7,541 ASCLS members. The e-mail blast contained a brief description of the survey and a link that directed the participants to a secure website (SurveyMonkey→) for completion of the survey. Anonymous data were collected by the survey software and provided to the committee for review. Responses were linked such that an individual's answers could be taken together and analyzed further (for example, demographics and level of participation), but no response could be linked to a specific person.

Collected data were tabulated by SurveyMonkey→ and analyzed by the ARC using quantitative and qualitative measures. Quantitative measures included review of close-ended questions in which statistical results were produced while qualitative measures included review of open-ended questions in which patterns or themes were produced.

## RESULTS

Responses to the ARC online survey were received from 411 ASCLS members, or 5.5% of those surveyed.

### What were the Educational and Certification Backgrounds of Participants?

Participant demographic questions assessed their highest education and certification levels. Highest academic degrees earned by respondents included: PhD 11.8%, EdD 1.2%, MS/MA 29.4%, BS/BA 45.3%, AAS/AS 5.1%, and other 7.1%. Respondents' levels of certification (selecting all that applied) included: specialist 17.0%, generalist (baccalaureate degree level) 71.5%, categorical (baccalaureate degree level) 7.9%, generalist (associate degree level) 6.4%, and other 12.3%.

### What were the Positives and Negatives of the Abstract Submission and Review Processes?

One major objective of this online survey was to determine if participants had submitted an abstract for presentation (poster or oral) at an ASCLS Annual Meeting. Only 18.5% of the 411 respondents had submitted an abstract for the Annual Meeting, and of those 93.7% were accepted. Of the accepted abstracts, 34.0% were from respondents with a Ph.D., 11.8% of the total respondents. Three percent of the accepted abstracts were from Ed.D.'s, accounting for 1.0% of the total respondents. Forty-five percent of accepted abstracts were submitted by the 29.4 % of the respondents who possessed an MS/MA degree. Sixteen percent of the accepted abstracts were from respondents with a BS/BA degree that included 45.3% of the respondents. AAS/AS degree holders completed the survey (5.1% of respondents), but none submitted an abstract. For the category "Other" (7.1% of respondents), two percent had abstracts accepted for presentation. The complete results are summarized in Table 1.

Fifty-four percent of the Ph.D. respondents had never submitted an abstract. Seventy-two percent of the MA/MS respondents had never submitted an abstract. Percentages of respondents of other educational levels who had never submitted an abstract were: Ed.D., 40.0%, BS/BA, 93.0%, AAS/AS, 100.0%, and other, 86.2%.

Participants were asked to provide open-ended responses to what they liked most and least about the abstract review process. The foremost theme that

emerged from these responses (N=37) regarding the positive aspects of the review process was the helpful feedback given by the abstract reviewers. This result was further supported by a close-ended question in which 80.4% of 46 respondents found the abstract editorial revision process to be helpful. Other positives included the ease and timeliness of the revision and submission process.

**Table 1.** Abstract Submissions by Educational Level

| Educational Level | % of Respondents | % of Abstracts Accepted | % Respondents who have never submitted |
|---|---|---|---|
| PhD | 11.8 | 34.0 | 54.2 |
| EdD | 1.20 | 3.00 | 40.0 |
| MS/MA | 29.4 | 45.0 | 72.5 |
| BS/BA | 45.3 | 16.0 | 93.0 |
| AAS/AS | 5.10 | 0.00 | 100.0 |
| Other | 7.10 | 2.00 | 86.2 |

Note: A large number of questionnaire respondents from all educational levels have never submitted an abstract to the ARC.

There were two prominent responses (N=38) regarding the negative aspects of the review process. One was the time lag between submission and final acceptance, and the other was that there were no complaints/issues with the abstract review process. The latter result was further supported by an open-ended question regarding recommendations for improvements in which the majority of respondents (N=36) indicated that the process was adequate with no improvements necessary.

All survey participants were asked to provide open-ended recommendations to improve either the quality or quantity of Annual Meeting abstract submissions. The most prominent response that emerged from the responses (N=137) was the need for resources to assist those in preparing an abstract, or a poster or oral presentation. Other suggestions focused on specific presentation content, awareness and promotion issues and incentive possibilities.

How the Onsite Oral and Poster Sessions Might be Improved?

Regarding participants' onsite ASCLS Annual Meeting experience, 67 respondents found their experiences to be: excellent 25.4%, favorable 89.6%, needs improvement 4.5%, and not applicable 6.0%. This indicates that there is not a strong need for improvement of the sessions at the meeting.

What are the Barriers to Participation in Abstract Submission?

Reasons as to why 81.5% of respondents' had not submitted an abstract to the Annual Meeting are presented in Table 2. It was revealing to note that 77.5% of respondents were not involved in research or the development of case studies.

**Table 2.** Reasons as to why respondents have not submitted an abstract. (N=297)

| Answer Options | Response % | Frequency |
|---|---|---|
| Not involved in research | 48.5 | 144 |
| I do not know enough about the abstract process | 44.8 | 133 |
| Expense of attending the annual meeting | 31.3 | 93 |
| I do not know how to get started | 31.3 | 93 |
| Not involved with case studies | 29.0 | 86 |
| No time for this type of activity | 25.6 | 76 |
| Employer does not support this activity (travel, time off, printing posters) | 23.9 | 71 |
| Other | 20.9 | 62 |
| I do not like public speaking | 16.2 | 48 |
| Nothing of interest to present | 12.1 | 36 |
| I submit to other scientific meetings instead | 10.1 | 30 |
| Inconvenient deadline for abstract submission | 3.0 | 9 |
| ASCLS Annual Meeting is not appropriate for my discipline/institution | 2.4 | 7 |

*Respondents could check all that apply. ASCLS = American Society for Clinical Laboratory Science.

What Sessions were Supported or Attended by Respondents at the Annual Meeting?

The majority of respondents attended poster presentations (75.1%) and oral presentations (64.3%) at the ASCLS Annual Meeting or when attending other professional meetings. Additionally, respondents were asked to select the conferences that they most often attended and responses were documented in Table 3.

## DISCUSSION

The existence of most professional organizations depends in part on the input of interesting or innovative ideas from the members. For science-based organizations, these ideas are often presented at annual meetings or conferences in the form of data garnered from research projects or educational studies. In this regard, the number of submitted research abstracts to the ASCLS Annual Meetings has been relatively low. It

has been considered that this is due in part to the lack of participation of MLS professionals in research and additionally due to the educational background and preparedness, or lack thereof, of MLS professionals to conduct research. To examine these hypotheses, the ARC surveyed the ASCLS membership.

**Table 3.** Meetings respondents' most often attend. (N=366)

| Meeting | Response % | Frequency |
|---|---|---|
| ASCLS | 53.3 | 195 |
| State or regional | 42.3 | 155 |
| CLEC | 24.0 | 88 |
| ASCP | 15.3 | 56 |
| Other | 13.1 | 48 |
| AACC | 8.7 | 32 |
| None | 7.1 | 26 |
| AABB | 6.0 | 22 |
| ASM | 5.7 | 21 |
| CLMA | 5.7 | 21 |
| CAP | 3.3 | 12 |
| CLSI | 2.2 | 8 |

*Respondents could check all that apply. Key: ASCLS = American Society for Clinical Laboratory Science, CLEC = Clinical Laboratory Educators' Conference, ASCP = American Society for Clinical Pathology, AACC = American Association for Clinical Chemistry, AABB = American Association of Blood Banks, ASM = American Society for Microbiology, CLMA = Clinical Laboratory Management Association, CAP = College of American Pathologists, CLSI = Clinical Laboratory Standards Institute

The majority of responses from the membership regarding their lack of abstract submission indicated that MLS professionals are indeed not involved in research (see Figure 1). Many of these ASCLS members are likely practicing laboratorians, perhaps best indicated by the percentage of respondents who are generalist baccalaureate degree holders. These individuals probably do not have much access to funding for initiation and completion of a study or project. Similar results were found by Mundt and Shanahan (2009) whose study focused on ASCLS members' perceptions of research in which it was concluded that barriers to conducting research included lack of adequate resources and time.[5]

Results indicate that, as hypothesized, few MLS professionals actively participate in research. In today's economy, many MLS professionals must work extra shifts or longer hours. Even during a single shift there is little time to develop a case study, think of a project, develop and write a grant, or write down observations. Although not clearly indicated by the survey responses, MLS professionals who are educators almost certainly face many of the same issues.

A curious response to the question of why respondents have not submitted an abstract is that they do not know enough about the abstract submission process or how to get started on an abstract or research project. This is of interest to ARC members because the ARC has published very concise and informative guidelines regarding the how-to of abstract submission on the ASCLS Annual Meeting website (http://www.ascls.org/?page=annual_meeting). In addition to this, a number of resources are available on the same website to all members that are intended to provide assistance to a first-time submitter or, once a submission has been accepted, support a first-time presenter. For MLS students and graduate MLS programs, program directors are sent email reminders about abstract submission for upcoming Annual Meetings. These aids were designed specifically to address the issue of MLS professionals and/or students being unaware of how to get started on an abstract or presentation.

The ARC has made abstract submission a simple, timely and helpful process. In 2011, the deadline for submission was moved to later in the spring to accommodate more schedules and increase the submission numbers. This strategy did result in a greater number of submissions than in previous years. Additionally, one of the positive aspects of abstract submission listed by the survey respondents is the helpful comments provided by the abstract reviewers. Each abstract is matched to two discipline-specific members of the ARC who remain anonymous to the submitter. Abstracts are reviewed and rated using a rubric that is consistent with the content category instructions given to the submitter prior to submission. If there are shortcomings in the abstract, each reviewer provides comments and suggestions for improvement.

The fact that only a fourth of undergraduate MLS programs offer a research course (Laudicina 2011) might explain in part why so few MLS professionals perform research.[1] Some professionals are required to do so, but these are most likely employed in an educational setting. For students, including brief investigative research projects, such as method comparisons or assay designs with concomitant statistical analysis, in MLS undergraduate courses might alleviate this lack of education. Once the interest in research is sparked for

some students, they might be more willing to design a study, collect data in a clinical laboratory, or even pursue a position in a research laboratory setting when they become certified laboratorians.

It has proven to be a difficult task to increase the number of abstract submissions to the ASCLS Annual Meeting. This survey study has given insight as to the reasons that abstract numbers have been low over the years, and the hypothesized reasons have been accepted as the explanation. The majority of MLS professionals do not actively participate in research or are inherently unprepared to do so. Perhaps it will take a major shift in thinking and education before this issue will be resolved.

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