

PROGRAM REVITALIZATION:
STRATEGIES for
SURVIVAL

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Dear Colleague:

The first edition of this document was prepared in 1999 by a NAACLS task force chaired by Dr. Kathy Waller in response to repeated requests for information to assist programs targeted for possible closure. In its strategic planning, NAACLS recognized the numbers of programs that have been terminated, especially CLS/MT programs, and that document was prepared to support all programs in their revitalization efforts. Over the past ten years, many things have changed while many of the issues have remained the same. Many of the strategies that were recommended ten years ago may not work in today's environment. This document is meant to assist you in being proactive in keeping your program open and thriving, as well as to provide strategies to keep programs open when closure is being threatened.

Although this text is written primarily to assist faculty and directors in Clinical Laboratory Science/Medical Technology, it is also intended for use by Clinical Laboratory Technician/Medical Laboratory Technician, Histotechnology, Histologic Technician, Pathologists' Assistant, Cytogenetic Technology, Phlebotomy and Clinical Assistant programs. Many of the strategies apply equally to these and other professions

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Other associates across the country are willing to assist you. You may contact NAACLS, ASCLS, ASCP, any of the task force members, or myself. We wish you a successful journey, if indeed, you need to use the planning strategies outlined in this document.

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Chapter 1: Introduction

In 1999, when the first NAACLS Strategies for Program Revitalization Task Force wrote its report, it stated that in the previous 25 years, over 40 percent of NAACLS accredited Clinical Laboratory Science/Medical Technology (CLS/MT) programs had closed, resulting in approximately 50 percent fewer graduates. Ten years have passed since that time, but the statistics now look even grimmer. In the past 25 years (1983-2008), the number of NAACLS accredited CLS/MT programs has decreased over 65%, which continues to result in approximately 50% fewer graduates. In the few short months since the 2009 Task Force was formed, two programs at major universities, Arizona State University and the University of Wisconsin at Madison, have both been told they will be closing. It seems inconceivable to many of us that clinical laboratory science programs would be told to close at a time when the laboratory workforce shortage has reached a crisis stage.

In healthcare, many professions are facing serious workforce shortages. The public is well aware of the shortages in nursing and family practice medicine. Institutional leaders and policy makers in health professional education and service delivery have focused much of their attention to ways the shortages in these professions can be alleviated. Nurses do make up a significant portion of the workforce and a predicted shortfall of 800,000 nurses by the year 2020 deserves attention because it will have a dramatic impact on healthcare delivery.

Unfortunately, the workforce shortages within the allied health professions are relatively unknown or perceived as less critical, in part because each individual profession has relatively low numbers compared to nursing. However, the over 200 allied health professions together represents a group of health care professionals more than twice the size of nursing. This group of professional is the other key component of the health care workforce. This group is comprised of professionals who run the machines of our high-tech health care system and provide much of the face-to-face care, as well as the “behind the scenes” specialized services that make the health system work. This is a diverse group of practitioners, in that it includes entry-level practitioners who participated in short training programs as well as doctorally-prepared professionals. Many of these health care professions are experiencing shortages that are greater in severity than the nursing shortage. However, because each profession is looked at individually, the shortage is not perceived as critical. This perception is dangerously incorrect. The Director of the Center for the Health Professions, University of California, San Francisco, has stated “as dramatic as [the nursing shortage] will be, it pales in comparison to similarly driven shortfalls in other health professional groups. And, as important as shortages in pharmacy, medicine, and even dentistry might become, they will also fail to reach the depths of the looming crisis in the allied health professions.”¹

The shortage of workers in the clinical laboratory, is affected by many of the same factors that affect nursing and other allied health professions. As the baby boom generation continues to age, more laboratorians are retiring from the workforce, and more healthcare for the aging population is required. This aging workforce and the increased demand for

services and care exacerbates the shortage. However, recruiting students into the profession has become increasingly difficult. There are more opportunities for science graduates, and the 24/7 staffing requirements for many healthcare professions, including the clinical laboratorians, makes these professions a less attractive as a career option.

Many allied health professions are also experiencing faculty shortages, and shrinking numbers of programs, which impact the number of new graduates available for hire. Clinical laboratory programs in particular seem to be at a higher risk of closure than other allied health professional programs. Dianne Cearlock, Chief Executive Officer of the National Accrediting Agency for Clinical Laboratory Science (NAACLS) shared information regarding the threat of program closure for fifteen allied health professions obtained from the various accrediting agencies (personal communication). Some of these professions were reporting many new programs opening, with Public Health reporting there were “more new programs than there was time to review them for initial accreditation.” Only four professions reported recent program closures, with clinical laboratory science as one of the two professions most affected by closure. However, with the increased complexity of laboratory testing and a greater focus on error reduction, the need for educated laboratory professionals has never been more important than it is today.

As laboratory programs continue to close and the number of retirements increase, the end result is fewer graduates to fill the increasing number of vacancies produced in the workforce. This problem is particularly acute in rural areas around the country. The Chief Executive Officer of one rural hospital stated “We could lose one or two RN positions - it would be tight but we could get by; however, if we lose just one x-ray or laboratory tech we may have to close our doors.”² Clearly, the shortage of laboratory personnel is having a dramatic impact in some regions. Yet, the importance of this issue is either not getting to hospital and educational administrators, or they are looking only at the bottom line in the hopes that other institutions will be able to produce sufficient graduates to meet the workforce needs of the state.

In order to understand why there is so little recognition of the need for education within our profession, we should look first at how the education of laboratory professionals began. The following section on the history of the development of clinical laboratory education has been taken from the first NAACLS Task Force on Program Revitalization.

“Let us trace first the development of CLS/MT programs. As one of the oldest allied health professions, we can trace the very early beginnings to on-the-job-type training. As the level of testing increased in complexity, the need for laboratorians with a science background became apparent. A rapid progression from “2+1 to 3+1” occurred. By the early 1970s individuals could sit for the Board of Registry certification examination only if a degree with appropriate course work and clinical training were obtained. Prior to 1970 the majority of accredited CLS/MT programs were sponsored by hospitals. Relatively fewer universities sponsored CLS/MT or other allied health programs.

“The Allied Health Training Act was passed by Congress in the late 1960s. Under this act, centers with three or more allied health programs, a minimum of 20 students, and granting at least an associate degree were eligible for federal funds. As a result we saw the emergence of Colleges and Schools of Allied Health. Many allied health programs traditionally housed in hospitals moved to an academic setting. Clinical Laboratory Science/Medical Technology was one of the few baccalaureate programs in which the majority of programs remained in the hospital setting.

“In the late 1970s, federal funding for allied health programs ended. Colleges and universities with allied health programs were no longer receiving federal financial assistance. This was the beginning of belt-tightening in allied health programs housed in academic institutions. However, hospital-sponsored programs were eligible for Medicare pass-through education funds. As long as a hospital was the provider of the program prior to October 1989, it was eligible to receive money. This support is decreasing as the government continues to cut the Medicare budget.”³

Hospital-based programs and university-based programs face many of the same issues but the arguments used with administrators when fighting against program closure can be very different for these two types of programs. Hospitals with CLS/MT programs are able to fill vacancies by recruiting their own new graduates, they can reduce recruitment and orientation costs. Tuition money from affiliated institutions can help to provide salary for the additional staff and program director needed. Frequently, hospital-based program faculty are also part of the hospital’s clinical laboratory staff, which increases scheduling flexibility when the faculty can perform testing if they are not teaching. The case can be made to administrators that a measurable savings is realized by providing this education to students. University-sponsored program officials cannot demonstrate cost benefits to their institutions as easily.

University-sponsored Programs

Many of the reasons that have been given for closing university-based programs have remained the same. The funding allocated by state legislatures continues to decrease, particularly as the economy worsens. The story in Minnesota is similar to what many states are experiencing, where this past decade has been called the Lost Decade.⁴ At the University of Minnesota, tuition has increased 68% from 2000 to 2007, while the state higher education funding per full-time student dropped 28% during that same time frame. In addition to passing the costs of higher education on to the students, many universities are finding ways to charge programs for services and other things in the university’s operating budget, such as space used, housekeeping, electricity, student support services, etc., in order to help pay the costs of running a university, making it difficult for programs to continue operating. With the decline in available funds, higher education administrators are looking at programs with low student/faculty ratios and high cost/student. This has been especially true in academic health centers, where many allied health programs are located. When programs are located within medical schools whose budgets are being reduced, it is often the allied health programs that are targeted for elimination.

One difference between most clinical laboratory programs and many of the other allied programs, such as physical therapy or occupational therapy, is that our degrees are primarily entry-level undergraduate degrees. The majority of students in clinical laboratory programs are seeking either an Associate's degree or a baccalaureate degree and undergraduate tuition is generally significantly lower than that of graduate programs. Some CLS programs have increased their tuition revenue by converting to an entry-level master's degree. Additional revenue for a laboratory program can also be obtained by charging laboratory fees to students, programs must be careful not to charge more in fees than the students can handle. Increases in tuition and fees usually result in students having to increase hours at their place of employment, which can result in decreased study time and eventually, increased attrition rates for the program.

Clinical Laboratory Science Programs are expensive programs to maintain due to the cost of the personnel, the equipment and the supplies. The breadth of the profession requires faculty with expertise in a variety of laboratory disciplines. Yet, qualified faculty are often difficult to find, and faculty vacancies often result in existing faculty taking on an increased teaching load. This is a problem for faculty at academic health centers, where research and fundable grants tend to be the primary focus. In addition to teaching responsibilities, faculty are expected to conduct scholarly and service activities. Although all university faculty are expected to engage in research, teaching, and service, the teaching load of CLS faculty makes this particularly difficult. This results in CLS/MT faculty not having the scholarship when compared to colleagues, and can have a negative impact on tenure decisions.

The factors most frequently influencing a decision concerning program closure have not changed since the 1999 Task Force Report was written. Decisions to retain or to close a program are made primarily based upon the following criteria:

- * Centrality of program to the mission of the university;
- * Program costs;
- * Overall quality of faculty, curriculum, and graduates; and
- * Extent of demands (current and future) for graduates, research, and service in the area.

Many of the questions program directors and faculty need to ask themselves have also remained the same, but some additional questions are also worth asking:

- * Is our program central to the mission of the university and/or medical school?
- * How does our research productivity compare to other programs?
- * How do our enrollment figures compare with other programs?
- * What is our success rate in being awarded grants?
- * How much scholarly activities come from our faculty?
- * What is our level of scholarly activity in furthering the body of knowledge of the profession?
- * What is our level of publications?

- * How well are we preparing our graduates for roles in health care, including academia?
- * What is the perception by administrators and the public of the quality and significance of our program?
- * What can we do to increase awareness by administrators and the public of the significance of our program to healthcare in the region?
- * What is the reputation of our program?
- * What are our program's costs?
- * What is the need for CLS/MT and CLT/MLT practitioners in our state?
- * What are the possibilities for collaboration with other laboratory programs in the region?

Hospital-sponsored Programs

For many hospitals, staffing shortages have made it more and more difficult to incorporate the training of students into the work day. Changes in administration can result in a stable program becoming an at-risk program in very little time due to changes in the priorities. Program closures are often the result of quick, short term decisions based on misinformation and false assumptions. The reasons for termination of a hospital-based are complex and varied, including:

- * Lack of knowledge or understanding by the hospital administration of the true costs of a CLS/MT program;
- * Lack of knowledge or understanding by the hospital administration of the full range of benefits a CLS/MT program provides - both tangible (i.e. reduced recruitment and orientation costs) and intangible (i.e, community perceptions, lab morale, and employees' continuing education which may reduce personnel needs);
- * Increasing laboratory automation;
- * Constant pressure on staff to handle an increasing workload, resulting in less clinical teaching time;
- * Downsizing and merging of hospitals and clinics; and
- * Misperceptions of future demands for CLS/MT personnel.
- * Misperceptions concerning the value and cost of certified personnel versus On-The-Job-Training personnel.

Similar to the university-sponsored programs, program directors must take an in-depth inventory of their programs and answer the following questions:

- * How often do you communicate program information to laboratory and hospital administrations?
- * Is the program central to the mission of the hospital?
- * What does the program really cost the hospital? (Here, one needs to emphasize costs that would remain, without the program).
- * How much does the program save in recruitment and orientation costs?
- * How can the program be modified to be more cost-efficient while maintaining its high quality?

- * How dedicated is the staff to maintaining the program?
- * How can the curriculum be adapted to ease the pressure on staff who teach?
- * What would be the negative effects of discontinuing the program?
- * Are there community benefits from the program?
- * Is there still a need locally and regionally for the program?
- * What is the employment rate of graduates?
- * How many graduates has the hospital hired? Include average tenure.
- * How will automation affect the program and future jobs?

These questions are not all encompassing, and there are likely questions that should be asked that are unique to the situation of your program. The important thing is to begin asking yourself the questions, even if you do not think your program is at risk. This Task Force Report has been written not only to help those programs that are currently being threatened with closure, but also to provide all programs with suggestions for increasing program stability before the threat of closure occurs, so new initiatives and innovations can begin now to revitalize existing programs.

The need for CLS/MTs will only increase as their roles are continually expanded and redefined. It cannot be stressed enough that CLS/MT education is a tremendous foundation for careers both inside and outside health care. Skills are developed that cannot be taken away, and that apply to other situations, anywhere in the world. Program revitalization is an essential element that all program directors should consider a priority. Do not wait until someone considers it for you.

References

1. From the Director: Centering on ... the Stealth Health Care Workforce Crisis. Future Health Newsletter, Center for the Health Professions, University of California, San Francisco. July, 2004
2. Lab Workforce Shortage Eases, but Challenges Persist. Office of Rural Health & Primary Care, Minnesota Department of Health Quarterly 7(1):4-5, (2005).
3. Program Revitalization: Strategies for Survival, NAACLS Task Force Report, February, 1999.
4. The Lost Decade, the Minnesota Budget Project, December, 2008.
<http://www.mncn.org/bp/lostdecade.htm>

Chapter 2: Program Survival Strategies Checklist

No program is immune to closure, but several major steps can be taken to help prevent this from happening. A proactive approach involving advanced planning can help secure a program's future. Anecdotally, the major reasons given for why programs close are 1) low student enrollment; 2) high costs; and 3) not fulfilling the institution's mission. These issues can be addressed. If enrollment is low, recruitment efforts must be intensified. This is so important that the next chapter focuses entirely on student recruitment.

Relative to cost, compared to many other allied health programs, CLS/MT and CLT/MLT programs are considered expensive. It is difficult to compare program costs because the programs are very different from, for example, health information or dietetics. A form is included in the appendix of this document to allow you to work through the actual cost of your program so that you can determine cost per student. The important point is to know your costs and to understand what drives them. To prepare a cost analysis, see Appendix A.

Begin to address the question of whether your educational program will remain viable by determining if the program philosophy and goals as well as operating practices are aligned with those of the sponsoring organization and the communities it serves. Program administrators must take a continuous, proactive stance. Do not wait to act until program closure threatens.

Using CLIA QA compliance as a model, program administrators must review and think about the potential threats to program survival periodically, or at least as part of an annual review. Self-sustaining, even growing programs can die a natural death if these critical components of evolution are overlooked.

This chapter provides a strategies checklist to assist you as you draft your own strategic plan for ongoing survival and revitalization. Our hope is that the checklist will serve as a platform of specific situations. Some of the strategies may be more specific to a particular organization or locale and have no bearing on your educational practice. We hope you will find ideas that can be adapted specifically to your own situation. We view this list as an organic document, the result of the committee's shared knowledge and joint brainstorming. It should grow and change based on the successes others have had with their own programs. In order to provide best practices, please share your ideas and experiences for what works, what doesn't work, and what strategies still need to be studied and analyzed.

Strategies

Breaking a complex process down into strategic components takes something away from the larger whole. Identifying the parts of a complex process allows one to focus on specific activities in order to devise a concrete plan for program revitalization.

Deans, directors, and faculty should work together to frame our strategies within a more comprehensive whole. Include the values and vision of the organization; the policies and procedures that sustain and constrain us; the needs of the community we serve; and the realities of tight budgets and limiting resources. The following strategic categories are

designed to help focus program health and sustainability. Depending on the program's priorities, situations, and needs, the categories and key points may be shuffled.

Know the mission and vision of your sponsoring institution

- Determine how your program aligns with that of the sponsoring organization.
- Use yearly goal setting and program evaluation as an assessment of this alignment. Modify or tweak your program's vision/mission as necessary to align with the sponsoring organization.
- Proactively initiate discussions with administration about this alignment.
- Be visible, be visible, be visible.
- Know the political terrain; Who are the decision makers? What are their positions? How does decision-making occur?
- Involve faculty in activities that are congruent with the organization's mission, whether the activities are in the areas of service, research, education, or community outreach.
- Identify or revisit communities of interest. The communities and their needs change over time.
- Determine the needs of your clients and customers: administration and staff, trustees, faculty, current students, prospective students, alumni, parents of students, accreditation organizations, governmental agencies, health care community, and the general public.

Turn to the local community you serve for data and support

- Form an advisory committee - make sure all relevant players are represented.
- Form a group such as the Healthcare Education Industry Partnership (www.heip.org) in Minnesota, which brings all of the laboratory educational institutions together with the laboratory managers and industry partners to work together on issues impacting clinical laboratories
- Work with and through clinical sites.
- Turn most frequently to those who employ your students; Re-examine skill sets required by employers now, and what requests they are making to look for the future.
- Determine the needs of potential employers.
- Expand clinical affiliates in terms of geographic area. Be creative about types of sites; include POLs, research facilities, industrial or reference labs, public health departments, walk-in clinics, etc.
- Determine the barriers that prevent some clinical sites from lending their support.
- Make curricular modifications with employers and prospective (non-traditional) students in mind.
- Collect data: Where are the jobs available in your region? How and where your graduates are filling positions? Is there a difference between where your students want to work and where they are taking jobs? Think local, state, region, nation, and international.
- Seek support from professional communities (industry, vendor, healthcare,

faculty, pathology) in terms of: philosophical support, equipment, clinical site participation, courtesy faculty.

- Get coverage for the profession through local media publics; newspapers, magazines, radio, and television stations.
- Do not threaten communities of interest (organization administration, professionals, outside organizations)

Understand professional demographics

At your program level

- Collect statistics on your own program and publish them annually: Applications; Enrollments; Graduates; National board exam pass rates; Professional placements; Location of placement; Movement to higher education; Career changes; Employment trends. (Remember percentages show a picture of professional interest vs. actual educational opportunities. It's important to show that there may be a waiting list and that coursework matters.)
- Track qualitative changes in graduates.
- Analyze program trends in light of state and national trends; make appropriate adjustments on an ongoing basis.
- Publish an alumni newsletter and keep track of alumni.
- Know what your graduates are doing professionally and where they are employed.
- Determine if graduates are still working in the field 5 years after graduation; if not find out why they left the field.
- Publish data on employment trends.
- Analyze performance of graduates on national board examinations; publish this data, if good.
- Survey graduates and employers between 6-12 months from graduation and entering the field.

At a state level

- Gather statistics annually on program and student numbers in the state and neighboring states.
- If there are program closures, determine why other programs have closed.
- Form an educators' group and have regular meetings with an agenda focused on at least one specific item within program survival or revitalization.
- Perform annual salary surveys - the information is vital for graduates, and also for recruitment purposes.
- Participate in state professional societies as an educational liaison.

At a national level

- Collect and reference published data on national statistics and trends.
 - * Percent changes in program closures/openings over the last 5 years.
 - * Numbers of students entering programs over the past 5 years.
 - * Numbers of professionals leaving the field due to retirement and attrition
 - * Decline or increase in supply of graduates.

- Enlist the help of various national organizations in collecting comprehensive demographic data.
- Keep informed of national trends, not just in laboratory science, but across health care.
- Keep abreast of the Bureau of Labor Statistics data on current numbers and projections for health care professionals.
- Know the factors that may lead to attrition from the profession.
 - * Numbers of science majors across the country.
 - * Effects of salaries on job satisfaction.
 - * Relationship of salaries and education/skills/job responsibilities.
 - * Professional recognition and public awareness of the field.
 - * Alternative opportunities for those in science
 - * Work hours
 - * Job mobility and career opportunities
 - * Issues of professional autonomy and independence
 - * Job stress
 - * Physical work environment and perceived hazards
 - * Stratification of employees with varied skill levels on the job.

Be aggressive in identifying program costs and how resources that pay for the program are allotted

- Be actively involved in short and long-range planning; assess whether you are on target with plans.
- Perform a cost analysis of the true costs of your program to the sponsor. Include both direct and indirect costs (a form is included in the appendix).
- Determine your cost per student.
- Determine the impact of a program's productivity on the larger department.
- Know the sources of funding for your program.
 - * Institutional support, including commitment of a chief administrator and board of directors.
 - * State funding.
 - * Medicare pass-through for allied health (hospital-based programs).
 - * Tuition.
 - * Student laboratory fees.
 - * Grants.
 - * Grants from pharmaceutical companies and industry.
 - * Endowments.
 - * Donations.
 - * Programs for special categories of students.
 - * Fund raising.
 - * Other marketable services: providing educational services (lectures/workshops/training); consulting; producing marketable educational products; teaching in other programs.
 - * Perform a costs-benefit analysis of the services you offer.
 - * Assess a dollar figure on non-revenue generating benefits.

- * Recognize that good business management procedures and practices are an absolute necessity to maintain cost-benefit ratios.
- * Work in collaboration with other programs to share services in a more cost effective manner.
- * Form a consortium in which multiple programs work in conjunction with one another to share program resources and costs.
- * Explore alternative methods of delivering program content that is more cost effective: self-instructional modules; computerized instruction; shorter clinical rotations; cored instruction.

Form collaborative networks with:

- Other educators
 - * Form a state or regional consortium.
 - * Participate nationally in educators conferences and professional societies.
 - * Communicate via e-mail on a listserv. To subscribe, e-mail CLSEUDUC-subscribe-request@LIST.APSU.EDU>. Type this message (with no subject, no automatic signature): <**subscribe CLSEUDUC-L**>.
 - * Local K-12 Science teacher associations.
- Employers
 - * Work closely with potential employers.
 - * Ask employers what they desire in your graduates.
 - * Identify employers, other than hospitals, that will hire graduates. Example: pharmaceutical companies have discovered the benefits of hiring a CLS/MT to do research studies and clinical trials. Contact colleagues in industry and in computer information systems for possible hirings.
- Pathologists
 - * Keep them informed of trends and involved in the educational process.
 - * Ask pathologists to assist in negotiations with administrators.
- The public
 - * Inform the public of who we are; talk with civic organizations, PTA, and high school science clubs to explain the profession's value.
 - * Be active in health and school fairs while including information on the profession for the public.
 - * Get involved in writing op-ed pieces for local newspapers and publications.
 - * Send e-mails to local television news stations about the profession and the shortage to suggest story lines about the clinical laboratory
- Academic and clinical institutions
 - * Maintain close contacts with those with whom you partner in the educational process.
 - * Expand these contacts to include the deans of allied health, biology/life sciences, and medical school, the provost, or vice-president.
 - * Serve on university/college/hospital committees such that your presence and contributions to the institution are noted.
 - * Make yourself and your faculty proactive and participative team members to the organization.

- High school and college career counselors
- Legislators
 - * Keep abreast of relevant regulations and legislation.
 - * Maintain contact with the legislative offices of national professional organizations.
 - * Visit your state legislators and attend town hall meetings they schedule in your area.
 - * Support politicians who espouse our values, through contributions, fund-raising, and participation in their campaigns.
- Those active in professional organizations (local, state, regional, national, and international)
- Alumni
 - * Alumni are excellent resources to promote your program to the public and to potential students. Alumni can assist with high school career days; judge science fairs; participate in an advisory group; and raise monies to support the program.

Focus on recruitment

- Develop a recruitment plan, including a budget. (Refer to Chapter 3).
- Know the demographics of the population you educate and focus recruitment appropriately.
- Define your enrollment goals and objectives so they are in line with institutional recruitment strategies.
- Recruitment requires a personal touch: contacts via visits, tours, mail, phone, thank you notes, and e-mail.
- Work with career counselors and advisors at the high school and college level.
 - * Provide them with information on how students are accepted into your program, career opportunities, salaries, etc.
- Know your competitors: compare what CLS/MT and CLT/MLT has to offer potential students in relationship to other professions that students might be considering (Degrees and/or certificates in chemistry, biology, radiological technology, respiratory therapy, physical therapy, occupational therapy, biotechnology, nursing, histology, cytotechnology, health information management, pathologist/physician's assistant, etc.). You may even be able to work with the biology or chemistry departments to develop plans for students to double major (cooperation vs. competition)

Enhance current efforts

- Target junior high school and high school students.
- Form collaborative relationships to support science education in middle and high schools.
- Expand contacts with colleges and universities.
- Move recruitment beyond the traditional biology or life sciences major to include other science curricula.

- Target students in non-science curricula who are interested in health care; work with non-science advisors to make science requirements part of the non-science curriculum.
- Work with placement offices for science and non-science graduates who cannot find a job.
- Increase program diversity by offering an alternative academic pathways, such as a part-time program; feeder program with two year institutions; online coursework to meet the needs of non-traditional students, rural areas, and/or areas with waiting lists.
- Look into “like-curriculum” offerings for transfer students with other biological science or allied health backgrounds.

Be responsive to student needs

- Schedule and offer curricula to serve student needs.
- Price your offerings so they are affordable to the students you serve.
- Promote your offerings in such a way that a target population will be aware of your services.
- Provide an avenue for CLT/MLT students to articulate to the baccalaureate level.
- Offer alternative ways for students to complete their curriculum in CLS/MT and CLT/MLT.
- Offer additional career options once the basic program has been completed, e.g., “add on” certification in certain areas such as molecular diagnostics and information systems.

Concurrently identify problems that affect student recruitment

- Determine if enrollment is associated with demographic changes.
- Look at an optimum level of enrollment in relationship to current enrollment.
- Evaluate whether your curricula are outdated, on target, and/or futuristic.
- Determine which competitors are offering a high-quality product.
- Examine your application and admissions process.
 - * Do you handle inquiries smoothly and efficiently?
 - * Does the office staff respond promptly and thoughtfully to requests for information?
 - * Do you regularly review this process?
 - * Does your admission procedure encourage qualified applicants to contact you year round?
 - * Do you inform applicants of their admission status within your school in a timely manner?
 - * Do you communicate actively with admitted students until they have entered the program?
- Determine if your faculty, curricula, and resources permit you to compete for the quality of student needed to be successful in your program.

- Be realistic about the student population you serve: if you serve students who enter with weaker academic backgrounds and skills, are you offering them the remediation and support they need to succeed?
- Determine if current financial aid programs can off-set student concerns regarding costs of education.

Use Innovative Teaching Strategies.

- Expand the curriculum to attract other science majors. Include a track in biotechnology and/or laboratory information systems. These courses can also be used as continuing education offerings for practicing professionals.
- Restructure the curriculum, if necessary, to allow for articulation from the CLT/MLT to the CLS/MT level. Often, the CLT/MLT can test out of basic courses and parts of the internship to allow for a modified, yet relevant experience.
- Expand curriculum to allow accelerated coursework for other laboratory professionals.
- Utilize state-of-the-art technology to alleviate heavy teaching loads. Students can use self-instructional modules, computer tutorials, on-line web courses, and podcasts.
- Reconfigure the curriculum to reflect current and future practice. The CLS/MT graduate should be competent in utilization of laboratory services; laboratory instrumentation, equipment, and tests; regulations and standards; financial functions; planning human resources; education; leadership skills and teamwork; and information systems.
- Collaborate with other programs in the area. Hospital programs, especially, can share lectures to avoid duplication of efforts. A consortium of area programs is another option.
- The NAACLS Essentials do not require a clinical experience. If clinical sites are a major problem, consider restructuring the curriculum to reduce the number of weeks spent in clinical rotations. Give credit or reduce time required for students who also currently work in particular areas of the laboratory, and can exhibit competency.

Focus on retention.

- Assess how responsive you are to your student body: courses, quality of instruction, library and computer resources, advising, tutorial assistance and remediation, job-placement services, and career advising.
- Assess the past record on retention; examine factors related to student attrition.
- Survey students who leave voluntarily.
- Relate issues of retention and attrition to admission and enrollment criteria.
- Provide an environment that provides the academic and social conditions that will foster professional and personal growth.

- When recruiting and admitting students, ensure there is a good-student to institution match _in terms of students’ interest, abilities, support services, etc. Refer students to other institutions if a match does not exist.
- Facilitate the student’s transition into the institution through activities that smooth the way, through appropriate orientation. Create a sense of identity with the program.
- Provide counseling from the very beginning: academic advising, counseling, and career placement.

Hospital-Based Programs.

In addition to what has been stated:

- Charge tuition or partial reimbursement from affiliated universities that charge tuition.
- Promote ability to recruit and train from within to hospital-based programs and clinical sites. The Healthcare Education Industry Partnership of Minnesota’s Clinical Laboratory Work Group reported in 2009 the average total cost for replacing an employee of the clinic, assuming an annual salary of \$50,000 would range anywhere from \$50,000-75,000. Replacement costs of an employee earning an annual salary of \$35,000 would range from \$35,000 - 52,500. (http://www.heip.org/clinical_laboratory.htm, “The Value of Serving as a Clinical Site” presentation)

Evaluate your strategies and actions. For example, use a SWOT technique.

- Evaluate your Strengths, Weaknesses, Opportunities and Threats to success.
- Identify and modify to fit current needs.
- Use analysis to look to future needs and begin to proactively discuss them now.

INTERNAL	EXTERNAL
STRENGTHS	OPPORTUNITIES
WEAKNESS	THREATS

Chapter 3: Recruitment: Marketing the Profession of CLS/MT

Low enrollment and/or attrition of students is one of the factors given by school administrators when discussing closure of a clinical laboratory program. Maintaining a full, or at least close to full class size, and recruiting good students who will be capable of completing a rigorous clinical laboratory is crucial for program survival.

In a two-phase study published in 2003, examined what motivates students to enroll in a clinical laboratory sciences program.¹ The first phase focused on the motivation to apply to the University of Utah's Medical Laboratory Sciences (MLS) Program, and utilized tape-recorded interviews and focus groups. Three themes were evident in phase 1. Influential people, the characteristics of the job, and the characteristics of the programs were all found to be important factors in choosing the MLS program. Influential people included the student's advisor, a family member or family friend, or someone from the MLS faculty. Job characteristics included the helping nature of the profession, the detective nature of the profession, and other job qualities such as flexibility, job security, etc. The characteristics of the program were also found to be important. These included the size of the program, the location of the program, the opportunity to use the program as a stepping-stone to another health care career, and the faculty. The clinical rotations were a significant reason for choosing the program. The University of Utah was able to utilize this information to target recruiting brochures to emphasize those points that students found most appealing.

Phase 2 of this study consisted of a national survey to look at factors influencing students to enroll in university-based CLS programs. The four most important factors motivating a student to choose a CLS program were found to be 1) the program's reputation and geographical location; 2) The influence of family, friends, and the student's college advisor; 3) The profession characteristics, such as job security, flexibility, and the solid foundation as a stepping stone to other health care fields; and 4) the information sources, such as brochures, catalogues, and web sites. This information suggests a targeted approach to recruitment, with marketing focused in the program's geographical area. The program should be made as visible as possible to college and high school advisors. Also, encourage alumni to spread the word about the profession. Emphasize the characteristics of the profession that students find most appealing: flexibility, job security, etc. In some areas of the country where salaries have been increasing as the workforce shortage becomes more severe, starting salaries can be highlighted.

In 2009, McClure² also found that students choose the profession because of the characteristics of the profession, including the variety of work environments offered by the profession and the detective-like nature of the profession. Self-directed Internet searches played a more prominent role, as did teachers and high school advisors. In this study, college advisors were mentioned infrequently. When students surveyed in this study were asked to identify the one thing they believed would be most helpful in attracting students to a career in CLS, the thing most frequently cited was visibility at high school career fairs.

Although enrollment numbers may not increase immediately, many places are targeting both middle and high schools to spread the work about the profession. CDs and online programs, such as Labs Are Vital are available (See Resources Appendix) for high school teachers and advisors to use. Laboratory practitioners need to be made aware these resources are also available to them for career days at their child's school, etc. Haun, et al.³ developed a web-based educational model for use in grades 9-12 to positively impact the perceptions of high school students about the profession. At the University of North Dakota, an online, one credit course was developed for high school juniors and seniors and for college freshmen to describe the roles of several health care professionals within the healthcare team.⁴ The course could be taken as an online format, or where connectivity was an issue, CD-ROMs of the presentations were made available.

Another method of reaching middle and high school students is through the use of summer camps. Programs such as Ferris State University's College of Allied Health Sciences Career Camp, Winona State University's SCRUBS camp, and the Centers for Disease Control and Prevention's Disease Detective summer camp for high school juniors and seniors (<http://www.cdc.gov/gcc/exhibit/camp.htm>) provide a mechanism for students to have hands-on experience with healthcare professions in a relaxed learning environment.

A portion of the recruitment effort at Texas Tech involves the students in the CLS program. As a part of their management course, CLS students were given the assignment to design the entire curriculum for a ten day, thirty hour presentation to middle and secondary school students. In making use of the CLS students' knowledge and enthusiasm, they were able to generate an increased interest in the CLS profession among the middle and high school students participating in the program.⁵

Another recruiting tool used at Texas Tech is participating in the university's Honors College. If you are a university program and your university has an Honors College or Honors Program, increasing your involvement and visibility with that program can not only help you increase your student numbers, but can provide you with some excellent students. This may mean developing courses within your curriculum that can be designated as honors courses. At Texas Tech University Health Science Center (TTUHSC), some of the clinical core courses in their clinical laboratory sciences program are designated as honors courses so students who have enrolled in the Honors College can continue their contractual agreement to enroll in at least six hours of honors credit at the junior and senior level.⁶ Hubbard et al. reported that being involved in the university's Honors College gives the CLS program a higher academic credibility for scholarly activity and serves as an excellent recruiting tool.⁶

In 2008, Alayne Fessler from Reading Area Community College completed her master's thesis on recruitment strategies for clinical laboratory science. This work has been summarized in an article in *Advance* magazine.⁷ One of the important points made in this article is that recruiting students is not something that should be done in the same way at all institutions. Recruiting strategies must be developed to suit the needs of the program. A well-formulated strategic plan should be developed, and this will take time

and planning. Ms. Fessler provides a six-step plan for recruitment strategies. This includes:

1. Specify a goal. A program will have multiple goals, but each strategic plan should have only one goal.
2. Establish a target group. Determine the best way to communicate with this group, and what they might find interesting about the clinical laboratory
3. Devise recruiting and marketing tools. The recruiting strategy should appeal to the prospective students' interests, needs and lifestyle. Budget restrictions, available facilities and manpower will also influence marketing strategies used.
4. Implement the recruiting plan. There are many stakeholders in a CLS program and the most effective plans will use a combination of all of them. Do not overlook currently employed laboratory professionals.
5. Evaluate and Measure Outcomes. This can be difficult to determine. On your application, ask students how they became interested in the profession. Get follow-up feedback from high school science teachers, etc.
6. Fine tune and revise the plan. All plans should be reviewed and revised periodically. What may have worked in the past may no longer be working. What may work in one region, may not work elsewhere.

This plan should be developed as a team, with all stakeholders involved in the planning. Review and revision should also be done as part of a team. "It is every stakeholder's responsibility to promote a positive image of the career and to participate in programs to help to recruit students into clinical laboratory science programs. A carefully developed marketing and recruiting plan can effectively bring more students into clinical laboratory science programs. Every successful recruitment plan brings us closer to ending the clinical laboratory worker shortage."⁷

1. Stuart, JM. The Challenging Journey of CLS/MLS Student Recruitment. *CLMA* 17(1):26-30 (2003).
2. McClure, K. Student Perceptions of the Clinical Laboratory Science Profession. *Clinical Laboratory Science* 22(1):16-21 (2009).
3. Haun, D, A Leach, L Lawrence, and P Jarreau. Students' Perceptions of Laboratory Science Careers: Changing Ideas with an Educational Module. *Clinical Laboratory Science* 18(34):226-232 (2005).
4. Bruce, AW, KJ Behm, and N Hammami. Breezing Up - An Interdisciplinary Health Professions Course for High School Juniors and Seniors and College Freshmen. *Clinical Laboratory Science* 19(2):112-116 (2006).
5. Sawyer, BG, J Hubbard, and L Rice-Spearman. Introducing Clinical Laboratory Science: CLS Students Help Shape the Future. *Clinical Laboratory Science* 19(4):206-213 (2006).
6. Hubbard, JD, B Sawyer, and L Rice-Spearman. Clinical Laboratory Science: A Profession with Honors. *Clinical Laboratory Science* 19(3):139-143 (2006).
7. Fessler AH. Making Over Student Recruitment Strategies. *Advance for Medical Laboratory Professionals* 20(18):25 (2008).

Chapter 4: Program Innovation and Survival

Medical laboratory training programs are expensive to operate. Salaries for faculty with expertise, expensive equipment and the high cost of reagents, test kits and disposable supplies are not offset by the tuition gained from a few students. Medical technology (MT/MLT), cytotechnology (CT) and histotechnology (HTL/HT) programs are deemed “low producing” programs in that the cost per graduate ratio is high. In times of economic difficulty, financial administrators at universities, community colleges and hospitals search for the means to cut costs which make these programs vulnerable targets for discontinuance.

Programs that survive have one thing in common – innovation. Although each program outlined in this chapter has approached survival differently, curricular change and new ways of recruiting and training students to maximize faculty time and talents are common themes. Online education, career-entry graduate programs, curricula which integrate multiple laboratory disciplines or specialties and program consortia are the adaptations which many laboratory science training programs have employed.

Online Medical Laboratory Science Programs

In 2001 Weber State University was the first program to develop online clinical laboratory science education for both the Associate and Bachelor of Science degrees. General education and laboratory science courses are offered online. Clinical experience is provided by the student’s employer. The University of Cincinnati’s online program allows medical laboratory technicians (MLT/CLT) to complete a Bachelor of Science degree in Clinical Laboratory Science while working in the profession.

In 2001, MLT Program Director, Dr. Suzanne Campbell was challenged to cut program spending and increase enrollment. Seward County Community College is located in Liberal, Kansas and serves the western part of the state as well as parts of Oklahoma and Texas. Discipline lectures are offered online and 90% of weekly lab activities occur in the clinical setting. Students who reside near the campus spend 5 days each semester on campus. A highly defined weekly schedule of laboratory activities, course goals and learning objectives keeps all students and clinical instructors on track. Medical laboratory technician students complete 480 hours of clinical training. The innovative program has increased enrollments in the seven years since its development and an adjunct instructor now assists Dr. Campbell (email correspondence April 7, 2009). These programs are among the growing number of distance education laboratory science programs offered throughout the U.S.

Interdisciplinary Education and Collaboration

Karen Chandler, Assistant Dean and CLS Program Director at the University of Texas-Pan American noted that faculty at her institution teach clinical microbiology to nursing and dietetics students as well as teach laboratory methods to physician assistant students. One faculty member teaches medical terminology online for other students on campus. By teaching outside of the CLS program, faculty generate close to 1,000 semester hours credit. Faculty collaborate with other programs in research projects and receive credit on all publications and share indirect funding as available (email correspondence, April 7, 2009).

Program Consortia

When the Medical University of South Carolina program in medical technology program closed about 10 years ago, it sent shock waves through the medical laboratories in the state. Ann Beaman, Program Director of the MT/CLS certificate School of Medical Technology at the Lexington Medical Center (West Columbia, SC), wrote that her institution and other South Carolina hospitals have partnered with Armstrong Atlantic University (AAU) in Savannah, GA to provide lectures online to students with Bachelor of Science degrees. Student laboratory sessions on campus are not offered as all laboratory skills are taught in the clinical laboratories. Clinical internships are provided by hospitals affiliated with AAU. In addition to offering hands-on training, the affiliates pay student tuition and provide employment after graduation. Ms. Beaman suggested that similar collaboration between universities and healthcare organizations present a solution to save programs (email correspondence, April 9, 2009).

Multiple Career Entry Options

At Thomas Jefferson University, students in the Department of Bioscience Technologies can choose between undergraduate and graduate programs in biotechnology, cytotechnology, and medical technology. Part-time programs exist in molecular biology, blood banking, clinical chemistry, hematology and microbiology.

The University of Alabama Birmingham offers B.S. and M.S. career entry degree programs in Clinical Laboratory Sciences as well as a MLT to MT program. Program director, Janelle Chiacera, Ph.D., MT(ASCP) reports that a blend of medical technology and cytotechnology education is being studied. A recent addition to the Department of Clinical and Diagnostics Sciences is the 1 year program Master of Science in Biotechnology. The new Biotechnology concentration in the Clinical Laboratory Sciences graduate program (MSCLS) and the new graduate certificate program in biotechnology are UAB's response to the high demand for workers in the Biotechnology/Pharmaceutical Industry. Two new faculty members have been added to the department to train the 20 students who enrolled in fall of 2009. The Biotechnology Program consists of three semesters of course work, a two week internship at a Biotechnology company, a research project and a scientific poster presentation at the end of the third semester. A student can choose to complete 34 credit hours for the M.S. degree in Clinical Laboratory Sciences with a concentration in Biotechnology or 20 credit hours for a Graduate Certificate in Biotechnology.

Career Entry-level Master's Program

In response to declining enrollments, the University of Tennessee Health Science Center (UTHSC) Program in Medical Technology has developed an additional option for students who have earned a baccalaureate degree in biology, microbiology or chemistry from a regionally accredited college or university. Students who have previously attained a B.S. at an undergraduate university are often unwilling or financially unable to attain a second B.S. degree in medical technology and are more enthusiastic to pursue graduate education. As the number of applicants for the Medical Technology program decreased, multiple options for attracting students were considered. These included an option for medical laboratory technicians (MLT) to complete a BS degree in MT. While that option does improve the skills and training of individuals, it does little to alleviate the

personnel shortage since it does not increase the number of laboratory practitioners in the field. Online programs were considered but the faculty discussed the difficulty of teaching the visual arts of hematology and microbiology online and there was concern about maintaining the program's high standards. The faculty also discussed the practice in universities of having bachelor/master students or master/doctoral students enrolled in the same course with additional assignments made for the higher degree.

UTHSC program officials consulted with the CLS faculty of Rush University, Chicago, IL, and Louisiana State University Health Science Center, New Orleans, LA, where similar programs existed and thrived. With the advice and the experiences of faculty in these programs, the UTHSC BS curriculum was modified to include graduate level content.

The new option earns students a Master of Science in Clinical Laboratory Science, Advanced Practice following 24 months of study. In addition to their B.S. degree requirements, qualified applicants must have successfully completed a minimum of 30 pre-requisite semester hours in the math and science courses required for the medical technology program.

Students must also complete forty-four (44) semester hours of the undergraduate professional medical technology courses with a cumulative GPA of 3.0 or higher on a 4.0 scale to be considered for the M.S. program in the second year at UTHSC. Master's level courses are taken with the B.S. in MT students in the second year but have higher cognitive level learning objectives to improve the learner's critical thinking and problem solving skills. To achieve these objectives, graduate students have additional assignments in each course including clinical rotations. These assignments include but are not limited to: additional reading assignments, essay test questions, journal critiques, case study presentations, concept maps, research papers and independent learning assignments. Graduate students work with a faculty mentor on a Master's Level Project which is written in a format suitable for publication in a clinical journal. Projects are presented to faculty and fellow students upon completion.

Cytotechnology and Histotechnology Education Combined

There is significant and growing need to produce more histotechnologists for the state of Tennessee and the nation. Letters of support for histotechnology education from major employers and physicians indicate the urgency to develop this curriculum. In clinical practice, histotechnologists work closely with cytotechnologists, medical technologists and pathologists. Much of the course content already exists within the current curriculum of the Master of Cytopathology Practice degree program in Cytotechnology. Given the current budget constraints placed on the University of Tennessee, it appears logical to utilize existing courses as well as faculty expertise and equipment in the Department of Clinical Laboratory Sciences to develop curriculum for producing these much needed professionals. In addition, graduates of the program would have the value of an additional certification in histotechnology along with cytotechnology. Managers of anatomic pathology laboratories will have the benefit of a "value added" employee who will multi-function at a high level at career-entry. Initial accreditation of the histotechnology component of the curriculum is underway and the first class has been accepted into the blended program.

Conclusion

The programs described in this chapter are but a few examples of curricular innovation. The reader is advised to refer to the Directory of Online Clinical Laboratory Science Education Programs for more detail. The Education Scientific Assembly of the American Society for Clinical Laboratory Science (ASCLS) published the Directory of Programs approved by the National Accrediting Agency for Clinical Laboratory Science. Revised in January 2009, the Directory lists online programs that fall under one of four categories:

- Clinical Laboratory Technician (CLT)
- Clinical Laboratory Science (CLS)
- CLT to CLS articulation programs
- Graduate programs in Clinical Laboratory Science

At a time of national medical laboratory workforce shortage, a choice of career entry options helps draw potential students and prepare them for careers in the 21st century medical laboratory.

References and Resources

American Society for Clinical Laboratory Science Position Paper. Model Career Ladder 2004. Available from <http://www.ascls.org/position/MCL.asp>. Accessed 2009 Feb 3.

Directory of Online Clinical Laboratory Education Programs approved by the National Accrediting Agency for Clinical Laboratory Science, January 2009. Available from <http://www.ascls.org/leadership/sa/esa.asp#CLEP-Online>. Accessed 2009 July 9.

Louisiana State University Health Science Center, New Orleans, LA, Clinical Laboratory Sciences Department. Available from <http://www.alliedhealth.lsuhscc.edu/ClinicalLaboratory>. Accessed 2009 September 11.

Rodahl, D & Panning, R. Levels of practice update. *ASCLS Today*, 2009:23(3). Rush University, Chicago, IL, Department of Clinical Laboratory Science. Available from <http://www.rushu.rush.edu>. Accessed 2009 September 10.

Thomas Jefferson Department of Bioscience Technologies. Available from <http://www.jefferson.edu/jchp/ls/>. Accessed 2009 September 11.

University of Alabama Birmingham, Department of Clinical and Diagnostic Sciences. Available from <http://main.uab.edu/>. Accessed 10 September 2009.

University of Cincinnati BS in Clinical Laboratory Science Distance Learning. Available from <http://clsonline.uc.edu>. Accessed 2009 September 10.

University of Tennessee Health Science Center, Master of Science in Clinical Laboratory Science Advanced Practice Curriculum, Available from http://www.utmem.edu/allied/clinical_exp_home.html. Accessed 2009 September 11.

Weber State University Department of Clinical Laboratory Sciences. Available from <http://www.weber.edu/Majors/clinicallabsciences.html>. Accessed 2009 September 10.

Chapter 5: Program Survival Case Studies

The University of Minnesota

Medical Technology/Clinical Laboratory Sciences Program

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When the University of Minnesota's Medical Technology Program was told they needed to cut their budget by about 35%, as a new and first-time program director, I saw this as the Medical School closing the program. However, the laboratory community in Minnesota is incredible and there was an organization in place that improves communication of laboratory professionals across the state. The following is a listing of some of the steps we took in Minnesota that changed our program from possibly closing to a program the University of Minnesota is using to showcase how technology can be used in higher education.

1. If there are other healthcare professions in your institution, get to know them, work with them, offer to teach sessions in their courses about laboratory services, serve on each other committees, and whatever else you can think of. One of the things that helped me as a new program director was getting to know the directors of the other allied health programs in the Medical School. When this large budget cut was given to the program (which had experienced numerous budget, faculty, and staff cuts in the preceding years), one of the other allied health program directors stated that he had funding issues with the Medical School the previous year that were not resolved as he had worked his way up hierarchy of the university and had finally gone to see his State Senator. It was fortunate that he and I lived in the same district, so he went with me when I went to see our senator.
2. As a follow up to point 1, get to know your legislators, to the extent that they also get to know to you, if possible. After I made the initial contact, I started going to my legislators' Town Hall meetings and giving both legislators (senator and representative) updates on how we were doing. This has carried over to help us in working for laboratory personnel licensure.
3. Arrange regularly scheduled meetings between clinical laboratory managers, educators, and other interested stakeholders. When I came to Minnesota, there was an organization in place called the Healthcare Education Industry Partnership (HEIP) <http://www.heip.org>. This organization was created to get industry involvement in strategic planning for healthcare workforce education and training needs of the State of Minnesota. It was at an HEIP clinical laboratory meeting that the plans were laid down for the first letter writing campaign. This organization has been instrumental in organizing salary and workforce surveys, assisting in grant writing and partnership development, developing recruiting tools and presentations that can be used to show hospital administrators the cost effectiveness of taking students for clinical rotations, and facilitating clinical rotation scheduling. The clinical laboratory group is part of the larger HEIP organization, which includes the Partnership Council. The Partnership Council is

composed of higher education administrators, Human Resource Directors, and representatives from various state agencies, such as the Minnesota Governor's Workforce Development Council. This has given the clinical laboratory workforce shortage a much higher profile.

4. One of the efforts the laboratory community has been able to help HEIP in developing is an informational health fair which occurs during the legislative session. Students from several of the CLS programs take part in providing POC glucose and cholesterol testing at the Capitol under the supervision of one of the hospital laboratories. The students love this and it's a great opportunity to show the legislators a little bit of what we do.

5. Keep in touch with your alumni. The University of Minnesota certainly has an advantage by being one of the oldest, if not the oldest, CLS/MT baccalaureate program in the country. I was fortunate that my predecessors were also excellent record keepers, and addresses have been maintained for our alumni. An annual newsletter has been sent out every year since 1947. This helps us keep in contact with alumni and has been a fascinating source of historical information as well. The newsletter also contains an invitation to attend the annual Alumni Banquet. At the banquet, the 25th, 50th and 75th anniversary classes are recognized, along with the current graduating class. For the past ten years or so, an Alumnus of the Year Award has also been presented.

6. When the Medical School was given the recommendation to close one or more of the allied health programs, the two most vulnerable programs were Medical Technology and Occupational Therapy programs. Over the previous three years, I had been in contact with my senator and representative about the shortage of laboratory professionals and the need to maintain the University of Minnesota's program, the primary supplier of CLS professionals for the State of Minnesota. My senator had already heard about issues with the Physical Therapy and Medical Technology programs, and when he heard that Occupational Therapy was being threatened, he decided it was time to take some serious action to support allied health programs. Legislation was introduced to directly fund the Medical Technology (MT) and Occupational Therapy (OT) programs at the University of Minnesota. Although the legislation didn't make it all the way through the House and Senate, it did pass through the first Senate committee, which resulted in the University of Minnesota taking action to stabilize the programs. The MT and OT programs were taken out of the Medical School and placed in a newly created Center for Allied Health Programs (CAHP). The mission of the CAHP is to serve as a statewide resource to develop allied health programs through signature academic partnerships, and excellence in teaching is a priority. (As an aside, one of the reasons given by the Medical School to justify closure of allied health programs was that we did not align with their Mission to produce competent physicians for the State of Minnesota. Their Mission Statement originally included allied health, but their Mission Statement was modified at about this time).

7. Start a state Legislative Day. Minnesota Laboratory Legislative Day was organized when the University of Minnesota's Medical Technology Program was threatened with closure, but has continued as the issue of licensure is being pursued. This one-day event

is organized similarly to the national Legislative Day sponsored by ASCLS, CLMA and ASCP. Laboratorians are encouraged to make afternoon appointments with their senator and representative. The morning is spent in a conference room at a nearby healthcare facility where the issues are discussed, and bulleted “leave-behind” handouts are provided.

8. Use every opportunity that comes your way to advocate for the profession, and encourage your students and colleagues to do the same. Opportunities can come your way at very unexpected times. At a Minnesota Rural Health Conference, a Senator that was a speaker mentioned in passing during his talk that “in a previous life” he had been in health care as a medical technologist. Knowing we had a former medical technologist in the Senate, who understood the profession has been a valuable piece of information. He’s now the chief author of our licensure bill. Other opportunities include writing editorial pieces for the newspaper and responding to articles in magazines

9. Work with the other clinical laboratory programs in your state, and don’t look at them as competition for “your” clinical sites. In Minnesota, the MLT/CLT and MT/CLS programs have worked together with laboratory managers to address the shortage of clinical sites, and to look at possibilities for sharing curriculum and learning objects. Collaborations between the 2-year and 4 year programs have increased the grant funding opportunities available to us. HEIP has also played an important role in providing a mechanism for the communication.

10. In an effort to keep our costs down while still providing students with a quality educational experience, when the laboratory managers at a nearby hospital are in need of new instrumentation, they will ask vendors to put in the contract a condition that if their instrument is the one purchased, the vendor will donate an old refurbished instrument to an educational program. It’s a win-win situation for everyone.

As a result of these efforts, the need for laboratory professionals has become so well recognized in Minnesota that since 2003, five new MT/CLS programs and one MLT/CLT program have either been created, or plans are being made to begin the accreditation process. In addition, the University of Minnesota has recognized the importance our CLS program plays in the education of laboratory professionals, and is now planning for us to become the showcase for e-learning and hybrid curriculum delivery for the University and the State of Minnesota.

Austin Community College

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I don't know if it's the economy, our information session or a little of both, but the number of our students has been increasing dramatically since I instituted MLT and

Phlebotomy information sessions about 3 years ago. The Health Science division has now put these online. Here is the link:

<http://www.austincc.edu/health/mlt/infosession/introMLT.php>

The students must complete all 4 sections and then make an appointment with the MLT faculty advisor.

I revamped our order of course offerings 3 years ago so that individuals with BS degrees could complete our program in 4 semesters (3 if they already have phlebotomy). I would say 25% of the 12 students in the program already have BS degrees or substantial college.

Once students have completed the information session our MLT faculty advisor maps out their degree plan and stays in touch EVERY semester. I believe a weakness in our previous system was that there was no "personal touch" in assisting students who had expressed an interest. We will be gathering statistics to see if this is really making a difference in keeping students interest during their first year since they are not taking any of the MLT core courses.

The last piece I will be working on is with the high schools. Our college has a strong relationship with area high schools. Students can complete all co-requisites as dual credit. Some high schools offer the phlebotomy didactic course as well. These high school students could earn their associate degree in 4 semesters if all first year courses were completed.

I believe our Phlebotomy program was instrumental in saving our program 10 years ago. This is offered 3 times per year with approximately 36 or more completers per year. We are now offering the Phlebotomy course as dual credit at some local high schools. The course must be taught by qualified instructors. The students then come to the college to be complete their clinical and are then awarded a certificate of completion. The numbers for these Tech Prep students range from 12-24 per year. I was concerned about flooding the market but most students (probably more than 80%) come in to get the certificate while waiting to get into MLT (it is now required) or some other health profession. We just started a Molecular Diagnostics certificate program. Right now we have only had 6 completers per year for the last 2 years. I am hoping that these numbers will grow as well. I believe that the more "completers" you have the more easily you can justify your existence. In 2008 we had 63 "completers". This looks really good to the college. I am hoping that for 2009 we will have 75!

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The CLT program here at Louisiana State University Alexandria (LSUA), located in Alexandria, Louisiana was recently placed on what the Louisiana Board of Regents calls it's "Low Completer List." Programs placed on this list failed to graduate an average of 10 students per year over the past five years. We realized several years ago that our graduation rates were low, so we initiated the following programs in an effort to increase enrollment and prevent program closure:

1. High school presentations designed to recruit students into CLT/CLS careers.
2. Developed forensic science type events to interest students in the laboratory profession.
3. Worked with the Central Louisiana Area Health Education Committee's (CLAHEC) A-HEC of A-Summer program. This program brings students to our campus for workshops, etc. that are aligned with CLT/CLS careers.
4. Signed a collaborative agreement with another institution in our region whereby students at that institution are able to transfer all general education credits to the LSUA CLT program, and take the professional component of the program through LSUA via compressed video and blended online classes. These students will do clinical rotations in hospitals in their areas since the partnering school is some 60 miles from LSUA. We have plans to extend our collaborative efforts to other institutions in our region since we have the only CLT program in the region. Collaborative programs should greatly increase our enrollment and graduation rates; probably more so than any of our other efforts.

The above mentioned efforts have allowed us to increase enrollment in our CLT program as well as our graduation rate. We graduated 14 students in December. We predict a graduation rate of 10-12 students per year over the next five years.

We have found recruitment efforts to be of major importance. The CLT curriculum is intense, so students are hesitant to take the hard courses (chemistries, etc.) for the salaries that they see upon completion of the program. As laboratory professionals, we must continue our work toward increasing salaries, so that students will see reasons to take the hard courses.

Saint Louis University

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A few things that has helped/stabilized our program:

1. Developed a new degree program within the department (initiated Fall 2002) to attract a broader student population: designed specifically as a preparatory degree (built on standard pre-med requirements) and included most of our pre-clinical CLS courses. Excepting for the practicum and special senior CLS year courses, the curriculum is essentially the same. For the new degree, these hours are used as "elective"-type hours, providing some flexibility in the curriculum. The name chose was both descriptive yet marketable: Investigative and Medical Sciences (IMS). Results: In 4 years, we increased the enrollment in the department approximately 360%...went from the lowest enrolled department of 7 in the college to the 2nd highest enrolled department (PT=highest).

NOTE 1: An intended side-effect of the new degree was to attract more students to CLS as well (show them who we are and they will decide CLS is what they really want). In 2008 we graduated the largest class from the department in its history (since 1929) and the largest CLS class in over 30 years. NOTE 2: Our Fall 2008 entering freshmen and transfer numbers have not replaced the record graduating numbers, so our enrollment has slipped some this year. However, the department student numbers are still almost 4 times the size of our low in 2002. NOTE 3: The new program (IMS) has enhanced our reputation on campus as being a solid academic program (prior to this program, pre-med students were being advised that CLS would not properly prepare them for medical school...I know, isn't that crazy, but we were not able to diffuse that previously. Now, even Pre-med Scholars are being referred to the department.)

2. We positioned ourselves as a "service" department for other programs in the college: the nutrition/dietetics students take our microbiology course; teach a major unit on laboratory testing/interpretation for the Physician's Assistant program; teach a unit on laboratory testing for the Physical Therapy doctoral students; provide OSHA/safety lectures for nuclear medicine/radiation therapy and occupational therapy students; provide faculty for the interprofessional education initiative of the college (currently have faculty involved with 3 of the 5 courses).

3. We have expanded visibility within the university through faculty service. Examples: one faculty served as chair of the Institutional Animal Care and Use Committee for 4 years 2004-2008; one faculty is currently a Faculty Senator (other faculty were previously senators, with one serving on the Faculty Senate executive committee which routinely meets with the Provost and President of the university); another faculty is active with the university's Center for Teaching Excellence; etc.

4. Of course, we are always trying to bring in grant moneys. Unfortunately, we have not been successful with awards with only very minimal funded projects. However, it did not go unnoticed that a total of 6 grant applications as well as additional letters of intent were submitted from our department during 2008.

Illinois Central College

Anh Strow, MPH, CLS(NCA), MT(ASCP)
Professor, Clinical Laboratory Technician & Phlebotomy Program Director
201 S.W. Adams Street
Peoria, Illinois 61635-0001

This was what I reported to our ASCLS-IL Board Meeting in January:

What was done:

- ICC students continue to go to local high schools to give talks
- ICC students displayed the board at Bergner's on the Community Day
- ASCLS was present at the Health Career Day at various places including a local hospital with demonstration
- Anh also went in to talk with group of undecided students about Clinical Laboratory Science

What hopefully will be done:

- A display with demonstration during the NMLPW at the ICC courtyard
- Create a short video to send to YouNews at the local TV station
- Continue to send students to judge science fair

I struggled last summer to keep my program alive due to low enrollments. So, I contacted all science instructors at our school to allow my CLT students who were in their classes to have 5 minutes to tell other students about the profession. The school marketing director also created a message (used the ideas from Labs Are Vitals posters) run on a TV channel for a week. Those actions saved my program. We had more applicants than we could take for the fall semester.

My aspiration is to have the national TV feature the clinical laboratory science profession. You have seen "picked city of the day" when they do the weather. How about "picked profession of the day".

Beaumont Hospital

Nancy Ramirez, MS, MT (ASCP) SH, CLS (NCA)
Program Director, School of Medical Technology
Beaumont Hospital
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Royal Oak, MI 48073-6769

I have provided a brief summary of the Categorical Technologist training that we have offered to employees with BS degrees working as laboratory assistants. I modified it to

work in conjunction with our recently re-structured 6.5 month Medical Technology program. It could be adapted to other hospital-based MT/CLS programs of longer length. To date, we have trained categorical students in Microbiology (5), Chemistry (1) and Hematology (1). This allows individuals with Biology or Chemistry degrees, who may not have known about medical technology during their college years, to still enter a career in laboratory science.

CATEGORICAL TECHNOLOGIST PROGRAM

- Offered in the laboratory disciplines of Hematology, Chemistry and Microbiology
- 6 month curriculum under the auspices of the NAACLS accredited School of Medical Technology
- Available to regular employee (full or part time) in good standing with at least 2 years experience
- Applicant must meet approval of the Admission Committee (*to ensure good GPA; completion of required pre-requisite course work; proper Biology and Chemistry credits to meet certification agency requirements, etc.*)
- Trainee admission requirements:
 - a) U.S. equivalent of BS degree in Microbiology, Biology, Chemistry or Biochemistry
 - b) GPA of 2.8 or higher
 - c) pre-requisite course work as defined by Admission Committee (e.g., Microbiology students must have General Microbiology, Clinical Microbiology with lab, Parasitology, Mycology, Molecular Microbiology)
 - d) permanent US resident or authorization to work in the US
 - e) good recommendations
 - f) previous laboratory experience preferred
 - g) employee for at least 2 years in good standing and Admission Committee approval
- Categorical Program Curriculum:
 1. Corporate Hospital Orientation - 1.5 days
 2. Program Orientation (including Laboratory Safety training) - 3 days
 3. Discipline-specific “Student” Laboratory Course with didactic (6 weeks – similar to MT Program student course)
 4. Discipline-specific “Specialized Laboratory Course (12 weeks – additional training in discipline)
 5. Immunology/Immunoassay on-line tutorial courses (e.g., MTS, CACMLE) – 1 week
 6. Body Fluid on-line tutorial courses (e.g., MTS, CACMLE) – 1 week
 7. Point of Care Rotation - 2 days
 8. Education Seminar for Allied Health Professions – seven one hour sessions
 9. Management Seminar for Allied Health Professions – eleven one hour sessions

10. Phlebotomy training – 1 day lecture & 4 days clinical
 11. Management Project - 5 days (plus poster exhibit and written paper)
 12. Case Study Oral Presentation and Written Paper
 13. Other on-line tutorial courses, as recommended
- Paid work experience during the categorical program with compensation as follows:
 - a) Current lab assistant wage during “student laboratory” training component;
 - b) 80% entry-level MLT wage during the “specialized laboratory” training component, while completing other program requirements and until successfully passing a national certification exam as previously described above.
 - c) 80% entry-level MT wage at program completion; upgraded to 100% upon certification.
 - Upon satisfactory completion of all curriculum components, clinical rotations, and work experience described above, eligible and approved for the NCA-CLS in _____ certification examination or the ASCP Technologist in _____ certification examination.
 - Employee must successfully pass a national certification exam within six months of hire. If unsuccessful, they are not allowed to continue working as a technologist.
 - In addition, it is expected that employee will commit to 2 years service in return for this paid training experience (to otherwise be repaid in CTO time or *No Hire* status).

Appendix A

**CLS/MT and CLT/MLT PROGRAM COST ANALYSIS
2009 - 2010 Budget Year**

Type of Program: ___ CLS/MT
 ___ 2+2 ___ 3+1 ___ 4+1
 ___ Univ/College ___ Hosp ___ Other

Type of Program: ___ CLT/MLT
 ___ Associate ___ Certificate ___ Other

Numbers of Students in Program (2009)

Numbers of Graduates in Program (2009)

If you have a graduate program, list numbers of students (2009)

List number of graduates (2009)

Expenses:

Direct Costs (Round to \$100)

Total Faculty Salaries and Benefits

FTEs =

Total Staff Salaries and Benefits

FTE =

Total Graduate Student Stipends and Benefits

Telephone and Fax

Office Supplies

Photocopying and Printing

Postage and Overnight Service

Computers, Service and Software

Travel

Continuing Education

Laboratory Supplies

Equipment Purchase

Equipment Repair/Maintenance

Memberships and Subscriptions

NAACLS Accreditation fee

Others, specify

Total Direct Costs

Indirect Costs (estimate)

To include office and laboratory space, lighting, heating, library, etc.

Other, specify

Total Indirect Costs

TOTAL COSTS \$

Cost per Student (Total Costs) Total Students

Cost per BS Student

(Total Costs) Total BS Graduates

Capital Assets:

Equipment for Teaching Labs (current value)

Teaching Microscopes (n =)

Computers (n =)

Printers (n =)

Scanner

Fax Machine

Copy Machine

Office Furniture

Miscellaneous

TOTAL ASSETS \$ _____

Resources

Total Tuition generated by all students

% of tuition program receives

Grants (total to include indirect cost recovery)

Fund-raising

Medicare Pass Through Costs

Other

TOTAL INCOME \$

Appendix B

**COST ANALYSIS FOR HOSPITAL-BASED PROGRAM
(Contributed by Nancy Ramirez)**

2009 - 2010 Budget Year

Type of Program: CLS/MT
 2+2 3+1 4+1
 Univ/College Hosp Other

Type of Program: CLT/MLT
 Associate Certificate Other

Numbers of Students in Program (2009)

Numbers of Graduates in Program (2009)

If you have a graduate program, list numbers of students (2009)

 List number of graduates (2009)

Presented by:	<i>Program Director Name</i>	
	<i>Program</i>	
	<u>BENEFITS</u>	<u>COSTS</u>
Sponsorship	Hospital assumes primary responsibility as outlined below.	Time and financial support
	Value & Visibility to Laboratory and Hospital Administration	Commitment of all players
	Value & Visibility to Corporate Workforce Development	
Program Oversight	Control or "Pride of Ownership" over:	
	Admission process	Time to conduct interviews
	Student selection	Time to review student qualifications
	Program timeframe and length	
	Curriculum design/format	Time to develop or update
	Curriculum content reflects current	Faculty and teaching

	clinical practices of site	technologist salary expenses
	Ease of making curriculum modifications as methodology and technology changes	
	Faculty selection from "expert" technical staff	Mentoring new faculty
	Evaluation content determined by hospital program faculty (i.e., quizzes, exams, practicals, performance evaluation)	Time to develop and update
	Certification exam score reports	ASCP Annual Score Report Fee = \$95
Other Intangibles:	"Pre-interview" of future employees	
	Students bolster staff morale by their excitement and enthusiasm	
	"Grow your own" / First pick at recruitment of graduates	
	Reduced hiring costs and advertising savings	
	Decreased orientation time for new personnel	
	Faculty and teaching techs stay up-to-date in knowledge	
	Students provide staff CE via their case study presentations	
	Faculty develop transferable skills for promotion	
	Graduates have opportunity to become "familiar" future instructors	
	Students are productive when they can assist techs	Some techs feel students slow productivity
Student Pool	Come from a variety of in-state universities	Pre-clinical coursework not equivalent
NAACLS Accreditation	Hospital holds accreditation.	Annual Fee = \$1200
	Hospital submits required documentation for the Self-Study (22 Standards).	PD and clinical instructor time to prepare
	Maximum attainable accreditation = 7 years	
	Hospital organizes Site Visit	Site Visit Fees ~ \$2400
Revenues	Application fee revenues	

	CMS reimbursement for allied health education	
	<i>(approximately xx% reduction in total expenses)</i>	
Misc. Expenses		Graduation Expenses
		Student Seminar
		Registration Expenses
		Student Loan Program
<u>INSTITUTION FACTS:</u>		
# Students/year	Medical Technology = X (2005-2009)	Students pay own expenses
	Catetgorical (micro, chem) = X (2005-2009)	<i>See attached Cost/Benefit breakdown of</i>
	2010 Classes = X	<i>tanigble revenue/expenses/savi</i>
	2011+ Classes = X (projection)	<i>ngs.</i>
Student Background	Mostly 4+1 with BS; occasional 3+1 (earn 16 credits for clinical)	
	16 credits Biology; 16 credits Chemistry per ASCP	
	<u>Program required courses: (example)</u>	Some universities don't offer all the required courses
	- Immunohematology	
	- Clinical Hematology / Hemostasis	
	- Clinical Chemistry	
	- Clinical Immunology	
	- Clinical Microbiology; Parasitology; Mycology	
	Lab component will be required for 2010+ classes	Some university courses don't have lab
Curriculum	Lab rotations in <u>all</u> Clinical Laboratory sections	
	Special rotations in LIS, POCT, Phlebotomy	
	Management Seminar and Projects	
	Education Seminar and Case Presentations	
Certification Pass Rate	<i>(fill in your institutions results)</i>	

Graduate Employment	<i>(% employment,% retention)</i>		

Program Models:

Model A **Model B**
students **#students**

Assumptions (see next page):

Other Revenue

Medicare Reimbursement for Allied Health Distinction
Application Fee Revenue
SMT Tuition / Univ. Tuition Reimbursement
Grants / Fund-raising

Total Operating Revenue

Operating Expenses

Salary and Wages
FICA (7.65%)
Rent (\$ cost per sq. ft.)
New Equipment - Nondepreciable (additional pcs)
Depreciation (current and proposed equipment)
Consumables (supplies/reagents)
Accreditation Fees
Miscellaneous Expenses (student benefits, books, software)
Faculty Professional Development
Student Recruitment / Retention

Total Operating Expenses

Cost per Student

Net Cost per Student

Income (Loss) from Operations

Program Savings to Department

Recruitment Costs (\$ per graduate hired - HR estimate)
Orientation/Training Costs (\$ per graduate hired - Lab Dept estimate)
Student Manpower (\$ saved by students working contingent vs tech overtime)
Graduate New Hire (minimum wage vs maximum wage for experienced tech)
In-service C.E. Contribution (case presentations)

Cost of Hiring Temporaries (vs investing in education of a student)

Cost of Unfilled Positions (advertising, sign-on bonuses, relocation expenses, orientation and training, delay in turnaround times and employee burnout)

Total Program Savings to Department

Net Savings per Student

Net Income (Loss) from Operations

REFERENCES:

Where's the Support for Clinical laboratory Science Education? Polansky, V.;
CLINICAL LEADERSHIP AND MANAGEMENT REVIEW, May/June, 2004; 160-
170

Report: Task Force on Education and Finance, RADIOLOGIC SCIENCE AND
EDUCATION; Spicer, Gregory, date unknown

Improving Hospital-based Programs II; RADIOLOGIC TECHNOLOGY, March/April,
2008, Vol. 79/No.4

Clinical Placements for Canadian Medical Laboratory Technologists: Costs, Benefits,
Alternatives A report prepared by the Canadian Society of Medical Laboratory
Science, Sep. 2004. <[http://www.csmls.org/english/pdf/annoncements/clinical-
placements-report.pdf](http://www.csmls.org/english/pdf/annoncements/clinical-placements-report.pdf)>

Assumptions for Cost-Benefit Analysis:	
PROGRAM MODELS:	
	Length of program
	Number of students
	Definition of Model A
	Definition of Model B
REVENUE:	
	Medicare allied health reimbursement calculated by Reimbursement for each model based on current year's cost report.
EXPENSES:	
	What salary expenses do include
	What salary expenses do <u>not</u> include (i.e., time on supervisory duties, teaching new employees, etc.)
	Explanation of new equipment - non-depreciable
	Explanation of depreciation calculation
SAVINGS:	
	Recruitment = Corporate HR cost estimate
	Orientation/Training = Additional hours needed to train external candidates
	Student Manpower = contingent PT work performed by students per class on evenings/weekends (assume 20 hr/week)
	Graduate New Hire = difference between minimum and maximum MT base salary times number of graduates hired that year

Appendix C

Cost of Replacing a Clinical Laboratory Professional*

- Most HR departments will factor 1 to 1.5 times the employee's annual salary.
- This includes direct and indirect costs for:
 - Processing the termination, payout of benefits
 - Review and authorization to replace vacated position
 - Job posting and advertising
 - Interviews
 - Processing the hired applicant (Health Service and screening)
 - Orientation and Training
- Assuming an annual salary of \$50,000, replacement cost will range from \$50,000 - 75,000.
- Assuming an annual salary of \$35,000, replacement cost will range from \$35,000 - \$52,500.

* From http://www.heip.org/documents/HEIP_Internships072709.ppt. A comparison of costs for taking a student for a clinical rotation vs. recruiting new staff and additional information can be found in the notes section of the above Powerpoint presentation

Appendix D

Sample Letters

Date

University President

Address

Dear President ():

As president of a professional association, I am writing to urge your reversal of the proposal to close the Clinical Laboratory Science/Medical Technology Program at (). My reasons follow:

This potential closure will adversely affect the numbers of laboratory practitioners in your state.

The CLS/MT program at your University is ranked among the top programs (of 300) in the nation. If it closes, we will lose educational leaders and researchers who have contributed to the profession and to this Society.

It appears that actual costs for running the program are not great, in comparison to similar university-based programs, as well as within a university of your size.

If the program is eliminated, an important and needed undergraduate offering will be eliminated from your institution.

Let me elaborate upon these points. Currently there are approximately 350,000 laboratory professionals practicing in this nation. Several thousand are in your state. Your institution provides approximately () percent of the new graduates in the state. In a 1996 survey, the national vacancy rate for baccalaureate-level clinical laboratory scientists/medical technologists was reported at 7 percent. For (state) that rate was ()percent. While health care institutions are down-sizing, merging and closing, numbers of laboratory personnel are needed. They are also aging. Indeed, it is predicted that an acute shortage of clinical laboratory scientists will be occurring in the United States and surely in (state). The CLS/MT program at the () has a ()-year history. It is rated highly among all programs, and faculty have contributed significantly to the profession and our Society. We would hate to lose them from our ranks.

In addition to my role as () of (), I am also a faculty member in clinical laboratory science/medical technology at (University). Our program is housed within the (School of Allied Medical Professions with eight other allied health units). This structure provides us with an organizational structure as well as the resources to support our research, service, and teaching efforts.

In comparison to our program, that at () is not expensive, and should be able to be accommodated within your Health Sciences Center.

Appendix E NAACLS Program Statistics

	1970	1975	1977	1980	1983	1985	1987	1988	1989	1990	1991	1992	1993	1994
CLS/MT Programs	791	709	667	652	638	584	509	464	436	420	410	404	393	383
CLS/MT Graduates	4408	6121	6519	6184	5318	4862	3979	3432	3148	3024	2932	3201	3416	3563
CLT/MLT Programs	210	191	180	204	272	281	262	256	258	256	256	255	253	254
CLT/MLT Graduates	1570	1636	2753	2511	3165	3278	2533	2370	2292	2292	2437	2559	2961	3220
HT/HTL Programs	0	27	32	47	49	43	41	40	39	37	39	39	35	32
HT/HTL Graduates	0	51	112	140	141	132	115	119	116	104	104	119	118	131
	1995	1996	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
CLS/MT Programs	357	334	294	276	263	255	242	235	232	230	228	226	222	
CLS/MT Graduates	3572	3155	2667	2491	2333	2061	1836	1932	1975	2141	2385	2706	2922	
CLT/MLT Programs	256	259	255	249	248	236	226	206	203	204	201	201	205	
CLT/MLT Graduates	3177	2930	2412	2381	2469	1940	1961	2129	2415	2500	2599	2416	2515	
HT/HTL Programs	32	33	30	29	30	24	25	28	27	31	30	31	33	
HT/HTL Graduates	114	78	120	118	141	109	177	204	216	209	226	285	348	

*NAACLS Survey data is used for graduate number starting in 2001 and program numbers starting in 2003. Prior data is from the AMA survey and the NAACLS Program Database.

http://www.heip.org/clinical_laboratory.htm

Appendix F Web Resources

For High School Students:

The College Board (CLS)

http://www.collegeboard.com/csearch/majors_careers/profiles/majors/51.1005.html

The College Board (CLT)

http://www.collegeboard.com/csearch/majors_careers/profiles/careers/105580.html

Career Information:

ASCLS Careers

<http://www.ascls.org/jobs/careers.asp>

ASCLS Recruitment Video

<http://www.ascls.org/career/recruitvideo/>

ASCLS Career Toolkit

<http://www.ascls.org/Career/ToolKit.asp>

“Diagnostic Detectives” Video

<http://medlabcareers.msu.edu/links.html>

“A Career in the Clinical Laboratory Sciences”

http://www.labscience.org/pages/labscienceorg_may04.ppt

Labs are Vital

<http://www.labsarevital.com>

Labs are Vital Career Information

<http://www.labsciencecareers.com/>

BLS Career Outlook

<http://www.bls.gov/oco/ocos096.htm>

ASCP Wage & Vacancy Survey

<http://www.ascp.org/MainMenu/AboutASCP/ASCP-Career-Center/Wage-and-Vacancy-Survey.aspx>

ASCP Career Center

<http://www.ascp.org/MainMenu/laboratoryprofessionals/CareerCenter.aspx>

Inside the Lab

<http://www.labtestsonline.org/lab>

Allied Health Schools Guide

<http://www.allalliedhealthschools.com/faqs/clinical-laboratory-sciences.php>

CLS Salary and Job Opportunities

<http://www.indeed.com/salary?q1=Clinical%20Laboratory%20Scientist&l1=>

“A Life Saved”

<http://www.ascls.org/leadership/ppc/lifesavedvideo.asp>

“Jump Start” by UNMC

http://www.unmc.edu/Community/jumpstart/html/medical_technology.shtml

Access Excellence Resource Center

<http://www.accessexcellence.org/RC/CC/ACLS>

Medical Lab Technician Programs

<http://medicallaboratorytechnicianprograms.com/>

The Career Explorer - MLT

<http://www.careerexplorer.net/jobchoices/movietemplate.asp?pageid=65>

Program Tools:

Program Revitalization: Tools for Survival

http://www.naacls.org/docs/Program_Revitalization_Manual.doc

“The Healthcare Workforce Shortage and Its Implications for America’s Hospitals”

<http://www.aha.org/aha/content/2001/pdf/FcgWorkforceReport.pdf>

Healthcare Education Industry Partnership Web Resources

http://www.heip.org/clinical_laboratory.htm