



New Technology in Microbiology; What's Next?

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Within the past decade, the clinical microbiology lab has seen the development of an array of techniques that reduce the time of collection to identification of agents of infectious disease. This includes bacteria, fungi, parasites and viruses. When molecular biological methods such as target amplification, signal amplification, various hybridization methods and the like became available in the microbiology laboratory, many thought the day of the traditional microbiologist had come to an end. The newest round of technologies involves methods that are mass spectrometry (MS) based such as matrix-assisted laser desorption ionization time-of-flight mass spectrometry (MALDI-TOF MS), PCR combined with electrospray ionization-mass spectrometry (PCR/ESI-MS) iPLEX Mass Array and others.

MALDI-TOF and ESI are referred to as soft ionization techniques. They allow proteins to be co-crystallized with a matrix. The organisms are either placed on the matrix plate from a pure culture or prepared as a protein extract prior to application. The mixture is then bombarded with a laser. The matrix absorbs the energy, transferring heat to the sample of proteins, creating ions. The ions are then released into a time of flight tube. The ions move to a detector, with the smaller ions traveling faster than the larger ions. The ions are then quantitated and an organism specific protein profile is produced based on mass-to-charge ratio and signal intensity of the ions. The soft ionization techniques have allowed the analysis of large biomolecules that previously were too fragile and damaged during ionization. The two major MALDI-TOF systems most frequently

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Trouble Ahead or Trouble Behind? President Signs PAMA

Ginger Weeden, Region X Director

If I've learned nothing else in my 15 years with ASCLS, I've learned that if, as a clinical laboratory scientist, I do not stay informed about issues affecting my chosen industry, then I cannot expect anyone else to stay informed and take appropriate action on my behalf. Although occasionally someone does step in or something does happen to save us from utter ruin, it doesn't always happen. Thus, the lesson: stay informed and take action as necessary.

That's why, in a February interaction with a young pathologist, I was dismayed to discover he was blissfully unaware of the possible impending disaster with the Sustainable Growth Rate (SGR) and the clinical laboratory fee schedule (CLFS) reform. When I asked his opinion of the situation and what he felt the appropriate action might be to save the industry, he shrugged and said that he had a CEO (of the pathology group) that would "take care of all that." My immediate thought was, "That's why he looks so young: he sleeps better than I do thinking that someone else is going to take care of him." But what does one say to the utterly naive professional? I struggled.

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President's Message

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The Social Connection – Feed Your Passion!

I have to say that I really struggled with a topic for this last 'real' article that I will be writing as President of the American Society for Clinical Laboratory Science. I do have one more article due prior to the 2014 ASCLS Annual Meeting, but that is just a print version of my President's speech, which is more of a wrap up of my year as President, so this is the last opportunity that I will have to share my thoughts.

I have struggled all year with coming up with topics for my articles, and even when I felt I had a good topic, I sometimes wasn't able to write more than a few sentences, so would end up scratching

that topic, or holding it for a later time when maybe my Muse would be more helpful. This article was like that. I had started two other articles for this edition of ASCLS today that I could just not finish for whatever reason, and it was only while attending an ASCLS-Colorado social function this past Saturday that I realized what I really wanted to talk about. I'm sure for many of you who know me, or have heard my "Passion for the Profession" presentation, it won't come as a surprise for you.



It all boils down to one of the main reasons why I have remained a member of ASCLS. ASCLS does so many things well, from providing laboratory related continuing education to representing the medical laboratory profession in the legislative arena. But what keeps me coming back year after year, how I *Feed My Passion*, are the opportunities I have to socialize and network with other professionals who work in the same field I do, who are members of the profession

of medical laboratory science.

This was brought home to me again this past weekend when I had the pleasure of attending a CE/ social event sponsored by ASCLS-Colorado,

in Fort Collins, CO. Between work and some of my ASCLS commitments my schedule can be pretty crazy, even on weekends, so actually having things work out that I could attend this event was a plus. And what was really great about this particular event was it combined both the opportunity to socialize and network with other members of the profession, while earning continuing education credit for doing it.

This weekend's event was held at New Belgium Brewery in Fort Collins, CO. New Belgium is the third

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Tips for Being Successful in Your Clinical Rotation

Linda Laatsch, Chair ASCLS PPC

With the summer season starting, many students begin their clinical rotations. I don't know about you, but I was pretty nervous. I wasn't sure how much they'd expect me to know or do, and I was sure I was going to say something wrong (especially when it comes to knowing all those organisms in micro!) Plus, it doesn't help that for many students by the time your rotation starts, you haven't looked over that material in a few months. My first rotation was hematology, and I finished the course 4 months prior! Don't worry if you're experiencing some of the same concerns, we all do. Here are some tips for getting through your rotation successfully:

- Review prior to the start of your rotation: You're not expected to know everything, but you can't walk into your micro rotation unable to identify if a bacteria is gram positive or gram negative. (Remember: Positively Purple; somehow that works for me) Reviewing before you start enables you to impress a potential employer (or simply the person influencing your grade) when they ask you questions. Trust me, they will ask questions! Don't stress if you don't get them all right. You want to show them that while you don't know everything, you know more than just the basics. The people you'll be working with are very knowledgeable. Many of them will explain things as they perform different tests, and give you a lot of extra information you weren't able to cover in class. Unfortunately, they won't be able to go into more depth if they have to walk you through things you should already know. So you're really just hurting yourself and limiting your experience if you don't review before you step foot into your clinical site.
- Be Professional: This is a big deal to me because it seems most people don't seem to understand or know how to be a professional. You can't show up 10 minutes late, in clothes that look like you slept in them, and wild hair. You have to look put together, and being late is simply rude. Be mindful of how you talk to people. Some students unintentionally give the impression they already know everything they need to know, or that they don't care, by the way they respond to people. If you do that, then the people working with you will lose interest in teaching you. You have to remember your rotation is essentially a long interview. You're being evaluated from the time you walk in until you're done. One point of evaluation is noting how well you can work with the current employees. You are also representing your program and school when you do your rotation. The only thing these hospitals, reference labs, etc. have to judge the quality of your program is by the students who rotate through. You want to leave your site thinking highly of not only you, but your school as well.
- Don't be afraid to ask questions: Now, you don't want to start asking another question before you've even received an answer to the first, but if you're confused ask for clarification. Some of you may not want to ask because you think that you'll be a bother, or that you should know the answer. Wouldn't it be worse if you did a procedure wrong simply because you were too afraid to ask for help?
- Express interest: We all have courses that are more appealing than others to us, but try to stay enthusiastic even when you're not. You don't want to offend anyone because of your lack of interest. When you give the impression you don't care, people don't want to train you. Even if you don't care for a particular lab, you still have to learn about it to pass your certification exam. Plus, if you're being trained by someone who is passionate about his/her job, it becomes contagious, and you might start to enjoy it. Also, you never know where you'll end up working. Personally, I couldn't stand hematology. I mean, who wants to sit for hours counting WBCs while performing a differential? Or counting cells on a hemocytometer, then have to figure out the math? Who knew the answer would be me? I was offered a job from a few different labs, but I went

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Minnesota Laboratory Licensure-2014 Legislative Effort “A Mixed Bag of Success and Disappointment”

Rick Panning, MBA, MLS(ASCP)^{CM}
Minnesota Licensure Coalition Co-chair

In Minnesota, the current licensure effort is in its 8th year (four biennial sessions). We have twice before had significant success in the Senate, but challenges in the House of Representatives. 2014's session was similar in that regard. This year's experience was one of hard-fought success in the Senate, frustration in the House of Representatives and significant opposition.

Behind the Minnesota licensure effort is a coalition of the following organizations, co-chaired by Rick Panning and Kathy Hansen.

- American Society for Clinical Laboratory Science-MN
- American Association of Clinical Chemistry-Midwest Section
- American Society for Clinical Pathology
- American Medical Technologists – Minnesota Chapter (MSSAMT)
- Clinical Laboratory Management Association-MN
- Minnesota Society for Cytology
- Minnesota Society for Histology
- Minnesota Society for Pathology
- Minnesota Interlaboratory Microbiology Association
- Minnesota Association of Blood Banks
- Representative from the Minnesota Department of Health

The Minnesota bill licenses the following categories of professionals: Medical Laboratory Scientist (plus categorical and specialist categories), Medical Laboratory Technician, Cytotechnologist, Histology Technician and Histotechnologist. The requirements for licensure are basic – education level, certification and documentation of ongoing continuing education.

This year, our journey began in the Senate Health and Human Services committee, where it became apparent both the American Association of Bioanalysts (AAB) and the Minnesota Hospital Association (MHA) were going to actively oppose the bill. At the very first hearing the two opponents made their issues very clear and they were effective in raising questions among the Senators. The issues raised were as follows.

- AAB:
 - Current CLIA regulations are sufficient and

licensure is not necessary

- Minnesota has higher quality than licensure states and therefore the licensure is not necessary
- Our bill exempts a high percentage of testing (waived testing and point-of-care testing)
- Lack of appropriate recognition of military training for laboratory specialists.
- AAB said they could support our bill if:
 - We had only one licensure category for 2 year and 4 year professionals.
 - Allow military trained laboratory specialists to be recognized as a 4 year MLS.
 - License all personnel performing waived and moderately complex point of care testing.
- MHA
 - This legislation was not necessary and CLIA is sufficient.
 - We had no evidence of errors
 - Our bill would raise costs by requiring small hospitals to hire more 4 year professionals.
 - The legislation, as proposed, has too many categories

Based on questions from the Senators, we discussed reducing the number of licensure categories and the misconception that our bill would require hospitals to replace 2-year professionals with 4-year professionals thus driving up costs.

We worked on an amendment to reduce the number of categories by creating a structure with two main license categories – 2-year and 4-year, and listed the various certifications under each. We did NOT reduce to one category as requested. The bill returned to the Senate Health committee, the amendment was introduced without any testimony and the bill passed.

The Senate State and Local Government Operations committee reviewed the advisory committee sections of the bill. The committee passed the bill with an amendment that changed the composition of the advisory committee at the request of MHA. The Senate Judiciary committee reviewed the civil action sections and also passed the bill.

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Collaborating with Workforce Investment Boards to Assist Medical Laboratory Students

Kyle Riding PhD, MLS(ASCP)
Rebecca Silva, MS, MT(ASCP)

One of the major concerns within the medical laboratory industry over the past decade has been the capacity of our educational programs to produce enough graduates to meet the demands of our workforce. It has been well-reported that NAACLS-accredited programs have decreased in number over the past several decades. While each closure occurred for issues unique to the program, the primary driving force has been the cost of the programs to their institution and a lack of knowledge about the profession among potential students. While reducing the cost of a medical laboratory program is difficult and may not be achievable, generating interest among potential students and increasing enrollment has been one strategy programs have used to remain viable.

The Quincy College Medical Laboratory Technician program is located 5 miles outside of downtown Boston in Massachusetts. It was established in 2009 when the college identified the need to educate medical laboratory professionals to meet the demand within the Greater Boston area. The initial class sizes were small and this potentially made the program unsustainable due to its cost. At that point, the program director and the Dean of the department strategically identified groups that could assist in the recruitment process and help engage students. While being sole applicants for various grants was one potential manner by which this issue could be remedied, the amount of work required of grant submission was prohibitive for a program that was in its infancy and in the process of curriculum design. A more effective solution involved working with the local workforce investment boards within the Greater Boston area.

This method proved to be very beneficial for a variety of reasons. First, it provided an avenue for the program director to be invited by local career centers to promote the profession among unemployed or underemployed individuals. The other key benefit was the ability to form a symbiotic relationship between the program

and workforce investment boards in regard to the grant submission. This benefit allowed the program to become involved with the Skilled Careers in Life Sciences (SCILS) grant that the city of Boston had been awarded from the U.S. Department of Labor.

The SCILS Initiative was funded in part by a \$5 million grant awarded by the Department of Labor's Employment & Training Administration. Eligible students within the MLT Program are provided substantial tuition assistance for their time in the program. Students are provided an intake form that assesses their eligibility. Furthermore, they are made aware that grant eligibility is an equal opportunity process that is based upon the requirements set forth by the grant. These eligibility requirements focus primarily on the student's place of residence and employment status to assure the target population of the initiative is being reached. This grant helped students enter the program who otherwise may not have been able to afford it. Thanks to this fact, student enrollment has doubled and the program was able to start a new cohort of students who attended classes in the evening to meet the demands of working professionals who wish to climb the career ladder.

Overall, collaborating with local workforce investment boards has been an important outreach activity for this MLT program. It has provided an avenue for the program to market the profession. Furthermore, it allowed the program to work collaboratively with local agencies to help procure funding for students within the program. As a profession, we have been in an alarming situation in regard to our workforce. However, this case highlights how working with outside agencies can be a benefit for our educational programs and our profession as a whole. Instead of trying to take on the entire burden of student recruitment and writing workforce-related grants, educators should feel empowered to work with government-agencies in their areas.

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Tips and Tidbits Towards Building A Robust Online Course - Part 1

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Building an online course is a daunting task especially if you have never taken one or built one before. I would like to share some of the tips and tidbits that have helped me the most in my continued effort to build an excellent online course.

Where to Start

I like to start by developing course goals and objectives. Objectives are the back bone or outline of the material and skills students will need to learn and develop to pass the course. Using SMART objectives is a valuable tool for both the instructor and students. SMART is an acronym for:

- S – specific
- M – measurable
- A – achievable
- R – relevant
- T – time-bound

As new information and technology become available there will be a need to update your course. Each year I review the course goals and objectives, and then adjust as needed making sure they are current and truly SMART objectives. I then review my course design and realign it with any new goals, objectives or course material.

Components of a Well-Designed Course: The components should include: ease of navigation, clear course objectives that are apparent throughout, and multiple learning activities and assessments. Therefore, as you design your course you should ask yourself:

Is it Easy to Navigate?

- Start Here Folder
 - Welcome to course
 - How to navigate through the course
 - Explain each toolbar, section or tab
 - Navigation should be easy and explainable
 - Checklist for getting started in the course – where to start

- Course Syllabus
 - Easy to read
 - Includes instructor information and office hours
 - Prerequisites and course description
 - Technology required
 - Course goals
 - Grading matrix
 - Disability links and information
 - Attendance verification information
- Course Schedule
 - Set up like the course – modules, sections, weekly, etc.
 - Information should include dates of each section, dates for assignments and assessments.
 - Lecture notes, chapters readings, videos, etc. for each section
 - Laboratory information if pertinent
- Weekly Learning Activities and Assignments
 - List all of the activities, assignments, lectures, reading, etc for the week.
 - I use a checklist and put it up on Monday of each week – show example
 - You can use checklist links contained in the Learning Management System (LMS) that link to all of the activities and assignments.

Are There Multiple Learning Activities and Assignments?

- Course Learning Activities or Assignments
 - Should be varied; fun and/or interactive
 - Examples: group discussions or presentations, debates, games, blogs, videos, virtual labs, flashcard builders
 - Use synchronous on-line meetings for interaction
 - Students can present or make videos
 - Debates online
 - If the activities or assignments are to be graded make sure to include a grading rubric and due date. (These should also be included in the course schedule)

Do the students (and the instructor) know how they are doing throughout the course? Are there multiple types of assessments to help students know how they are doing throughout the course?

- Student self-assessments throughout the course

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LAMBDA TAU: A TIME FOR RENEWAL

The national academic honor society in our field, Lambda Tau, was incorporated in 1950 at the University of Oklahoma (Norman, Oklahoma). Our organization (ASMT then) recognized it as the official Medical Technology Honor Society at our national meeting in 1953 (Portland, Oregon). At one time it had chapters in 21 states. Times changed, people moved on and it was functionally disbanded by the mid 1990's. There have been efforts to revive the national organization and in 2011 the University of Massachusetts (Dartmouth, Massachusetts) began hosting Lambda Tau for organizational purposes. From all that we have been able to determine, there are or have been Lambda Tau chapters at:

Auburn University (AL)
Austin Peay State University (TN)
Farmingdale State College (NY)
Liberty University (VA)
Salve Regina University (RI)
Southwestern Oklahoma State University (OK)
St. John's University (NY)
Stony Brook University – SUNY (NY)
Tarleton State University (TX)
University of Hartford (CT)
University of Louisiana Monroe (LA)
University of Massachusetts (MA)
University of Oklahoma (OK)
University of Rhode Island (RI)
University of Texas Medical Branch (TX)

In addition, we have received expressions of interest from SUNY Buffalo as well as several other institutions.

I am quite sure these lists are not complete, so our next step is to ask you to volunteer the names of chapters that wish to be associated with the national Lambda Tau, as well as those that would like to form a chapter associated with the national Lambda Tau. We are prepared with support material and information. It would be most helpful if we could get full contact information (name, title, college address, phone, email, fax, etc.) and an indication this is an established Lambda Tau chapter or interested in becoming one. For the former, we will be compiling a national list of chapters. For the latter, I will send beginning procedures and instructions. For all, we will consider the re-establishment of **The National Council, Regional Governors** and other elements of the structures in the By-Laws. Please address all communications to:

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Generalists: Most of Us Start Out That Way

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When looking at the general composition of the clinical laboratory workforce, and at the Medical Laboratory Scientist level in particular, it's interesting to note that despite the specialization that has taken place in our field over the last few decades the vast majority of us are certified as generalists. As of the end of 2012, ASCP had 243,969 certifications in the MLS category and 12,794 certifications in all the general laboratory specialist categories combined. This statistic does not include categorical (limited) certifications. No doubt this is a function of the way our education system is constructed. Medical Laboratory Science programs produce generalists, not specialists. However, it seems that most of us end up specializing in a particular area of the laboratory because most of the jobs are in hospitals or independent laboratories which are departmentalized. Hopefully, most of us made an intentional choice to select the area of the laboratory that we were most drawn to rather than to have had the area chosen for us by circumstance. Some of us liked the variety, could not make up our minds, or by circumstance, stayed generalists.

But getting back to the fact that we mostly start out as generalists, I realized when looking at how state licensure is structured, it too is structured primarily for generalists. Eleven states and Puerto Rico currently require licenses to practice as a laboratory professional within that state or territory. One additional state, Georgia, requires certification for personnel as part of its facility law, and does require licensure of the Laboratory Director, but those qualifications are similar to the CLIA requirements for a laboratory director. The eleven states that require licensure are: California, Florida, Hawaii, Louisiana, Montana, Nevada, New York, North Dakota, Rhode Island, Tennessee, and West Virginia.

States with licensure have both educational requirements and examination requirements. Almost all states that have licensure use national certifying exams, such as the Board of Certification (BOC), to provide the examination part of their licensure. California use to require all MLS applicants to take the state-offered generalist examination, but they stopped requiring this some years ago due to fiscal considerations and started accepting national certifying exams in lieu of their own exam. In addition, they accepted national certifying exams for Microbiology, Chemistry, and Toxicology limited

licenses. Each state establishes which certifying agencies it deems acceptable, and there is wide variation between states as to which each accepts.

Certification as a specialist is not required to work in a specific area of the laboratory, but is a way to advance in the profession in that area. Many laboratories show preference for certified specialists in a particular laboratory discipline when searching for a section supervisor. Interestingly, the primary pathway for eligibility to sit for an ASCP specialist exam for most categories is to have a generalist certification with three years of experience in the specialty area. The Specialist in Blood Bank (SBB) is the exception to this as there are CAAHEP accredited Specialist in Blood Bank Technology programs in existence and this is the preferred route. So, even becoming a specialist in an area is frequently through being a generalist first.

Most of the states that do require licensure have a pathway for categorical professionals; these licenses are generally for those people who entered our field through a non-traditional route and whose practice is limited to a certain departmental area. Passing a national certification exam for the discipline is required to obtain a limited (categorical) license as well. If a person is moving from a non-licensure state to one that is licensed and has worked for many years in one area and would only be looking for employment in that area of the laboratory, sitting for a categorical exam might also be an option for them; especially if they either never certified or hold a certification not accepted by that state. Florida appears to be the only state that requires a previous MLS level license to "add a specialty" to the license. This seems to be a true "specialist" license rather than a categorical. So, everyone must have a national generalist license to qualify to work in a routine laboratory in Florida.

The truth is that with few exceptions, we all start out as generalists and "decide what we want to be when we grow up." As a career-long generalist, "I don't ever want to grow up." It is fun keeping up with all areas of the laboratory. And, I do know that those who have specialized also enjoy using their continuing education time to check in on the other areas of the laboratory!

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New Technology From Page 1

used currently are: the Bruker instrument which utilizes its own software system and the Vitek MS which is a Shimadzu instrument with launch pad software developed by AnagnosTec GmbH and acquired by BioMerieux. Andromas (a French start-up) also provides a software package that is compatible with both the Bruker and Vitek systems. The databases are reported to contain up to 2000 protein profiles for species identification of a variety of bacteria, mycobacteria and yeast with a higher positive identification performance than any phenotypic system available. The technology has demonstrated to be useful for identification of routine clinically relevant bacteria such as Enterobacteriaceae, Staphylococcus and Streptococcus spp. in addition to agents of bioterrorism such as Francisella tularensis and Bacillus anthracis, as well as organisms that are difficult to identify such as Legionella sp., anaerobes, etc. The identification of filamentous fungi has been traditionally difficult utilizing morphological characteristics and has significantly improved through the use of MALDI-TOF MS.

Despite the decrease in consumables and improved turn around for the identification of various organisms, the systems have limitations to their ability to identify organisms to the subspecies level. The systems are not useful for identifying all organisms and have difficulty with differentiating such organisms as Escherichia coli and Shigella spp. In addition, a large number of cells is required for application to the matrix, therefore isolation and growth is still needed for identification. We are finding that rapid identification direct from body fluids is currently difficult due to contaminating organisms or relatively small numbers

of organisms. Techniques such as centrifugation and serum separator tubes have been used for processing blood cultures to improve direct detection. Another difficulty is associated with the culture media, used to grow the organisms. Some media exhibit low identification using MS whereas others, such as routine blood agar, demonstrate a high rate of accurate identification. And finally, maintenance on the instruments often require up to 2 days.

Newer mass spectrometry systems have now been developed such as the PLEX-ID system (Abbott Diagnostics), a fully automated Polymerase chain reaction (PCR) amplification of ribosomal and housekeeping proteins coupled to electrospray ionization. The method combines the identification of species specific and conserved target gene sequences in comparison to a known database. This technique is useful in identifying the organisms and the antibiotic resistance genes. The iPLEX Mass ARRAY system is a single-nucleotide polymorphism platform that uses a single base extension PCR coupled with MS technology. The system is available from Sequenom (San Diego, CA). The differential mass of the extended primer sequences is identified using MALDI-TOF MS. The spectrum of sequences is then compared to a reference database.

So what is next? Other systems are already being developed that utilize different technology. Surface enhanced laser desorption-ionization time of flight (SELDI-TOF) combines a chip-based chromatographic enrichment with MALDI-TOF. The chip can be designed chemically to attract proteins of interest based on hydrophobicity etc. for rapid throughput. And finally there is something referred to as a MALDI triple quadrupole that is capable of measur-

ing enzyme-mediated, time-dependent hydrolysis of antibiotics. Commercial MALDI-TOF instruments will likely evolve rapidly. These new and rapidly evolving technologies will improve the identification and antibiotic profiling of infectious agents. However, despite the technological advances, rest assured the traditional microbiologist will still be a valuable asset for differentiating pathogens from normal microbiota, preparation of isolates and interpretation of computerized results. The future--anything can happen.

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Trouble From Page 1

I sleep only marginally better these days knowing the SGR patch is in place, and there is at least a chance intelligent professionals from our ranks will be involved with the CLFS reform.

Specifically, the proposal repeals CMS authority to make changes to the CLFS based on technological changes and replaces it with a process to adjust reimbursement based on market rates, provides a per test phase-in of reductions in reimbursement, creates a payment adjuster for laboratories serving the most vulnerable Medicare beneficiaries, and requires a clearly defined, transparent process for reconsideration of CLFS rates.

While there are still grave concerns about the law titled the "Protecting Access to Medicare Act of 2014," it does at least keep CMS from indicting the entire CLFS and reducing reimbursements for all test codes simultaneously.

Fast-forward to, let's say, 2018 and, for the sake of argument, that being involved with the process, voicing your opinion to the professional organizations involved and writing your Congressman had no effect in the end. Did your investment in time to stay informed result only in an expenditure of energy and in loss of sleep?

Not at all! You are now in the enviable position of being able to lead your profession and your industry --with much greater ease--through difficulty that may lie ahead. You are now informed about the changes that will happen and how they will affect your business. And it will not be "business as usual." You will be able to understand the economics of the situation and advise your leaders accordingly.

That, dear colleagues, is the payoff for your investment, not only in the time and effort to stay informed, but also in the time, emotional and loyalty investment in ASCLS. *Voice, Vision and Value.*

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President's Column From Page 2

largest craft beer brewer in the United States, and also the brewer of one of my favorite beers, Fat Tire. Thanks to the planning skills of the organizer, ASCLS-Colorado New Professional Chair, Ian Wallace, we had around 35 attendees for this, including a large group of students and some of our younger professionals, along with various spouses, significant others, and family members; I think we all had a good time touring the brewery and learning about the craft of brewing beer, and the science behind it.

I was very impressed with the laboratory work the New Belgium brewery does to ensure the quality of its beer. We toured the Micro lab, complete with plates, and the Chemistry lab, where they QC the beer, and which included analyzers ranging from an old spectrophotometer to a HPLC to a new GC/MS where they analyze the head space of the beer.

So, there was laboratory science, quality control and an opportunity to socialize and network with other laboratory professionals, and then throw in a free beer along the way. What could be better than that? These opportunities ASCLS provides at the local level are a great way to get to know other medical laboratory professionals in your area, and for you to continue to Feed Your Passion for the profession of medical laboratory science.

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Rotation From Page 3

with the hematology lab where I did my rotation, and let me tell you, I love it! Had I expressed my disinterest for that particular lab during my rotation, they probably wouldn't have offered me a job, and I would've missed the opportunity to do something that I didn't know I loved.

Your rotations are exciting! It's when you're finally able to see all you've learned in practice. Remember the people working with you aren't being paid more to teach you. So they might have days where they don't seem thrilled about explaining everything they do. It's nothing against you, but you can still watch and learn. The knowledge and experience you receive is mostly up to you and your attitude. Since you have to be there, you might as well make the most of it. I loved my rotations and the one-on-one attention I received. After completing my internship, I knew more than ever how this field makes a difference in patients' lives, and that I wanted to be a part of it. So enjoy your rotations because it's the best part!

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Licensure From Page 4

The bill was then referred back to the Senate Health Committee. Based on our chief author's original promise, we agreed to meet with the opposing groups and come to agreement on issues. Kathy Hansen and our lobbyist met with representatives of MHA and AAB. Previously, we met internally and proposed changes we hoped would help move us toward their direction, without sacrificing the integrity of the bill. Briefly those changes were:

- Add specific language, for MHA,

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*Licensure**From Page 10*

stating nothing in the bill required a specific level or mix of staffing and those decisions, as required by CLIA and accrediting agencies, continue to be the responsibility of laboratory management. MHA seemed pleased with the language and agreed to take it back for approval.

- We changed the personnel requirements to combine education and certification into one and recognize the educational requirements as prescribed by the certification agencies. This allows AAB's certification, which does not require a bachelor's degree for the Medical Technologist, to be recognized in the bill. We felt we could make this concession because there are few AAB certificants in Minnesota and it is still up to individual laboratories to hire personnel with the appropriate education and certification to correlate with their test mix and to meet CLIA requirements.
- We removed any language related to military trained personnel as the previous change helped address it.

Both AAB and MHA said they would consider the language. AAB made a few language changes but agreed to remove their opposition. MHA, although pleased with our language changes, remained in opposition. The amended bill returned to the Senate Health Committee and was passed and forwarded to the finance committee.

While this was occurring, our lobbyist, working with the chair of the House Health Committee tried to get us a hearing but that effort failed. While we had ways to move the bill forward in the Senate through the omnibus bill process, on March 28

we were informed, that due to inaction in the House, there would be no further action in this session.

The strength of the opposition was significant, especially from MHA. However, we were able to work through many issues and have success in the Senate. The lack of a hearing in the House, with no opportunity to present our case, was disappointing at best.

We are regrouping and will begin to make decisions about the future of the effort. We need to consider the possible significant changes in the legislature for 2015 and the financial needs of a continuing licensure effort and other factors.

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*Tips & Tidbits**From Page 6*

- or at mid-term
 - Practice quizzes, games, flash cards
 - Self-evaluation using journaling or blogs
- Assessments of course material
 - Use a variety of assessment types
 - Make sure students are aware of the material covered and the due dates for each. Can use a Grading Rubric and objectives.
 - Use Respondus LockDown or other LMS browser locks so that students cannot go to other sites while taking assessments.
- Feedback
 - Students should get feedback within a reasonable time frame
 - Time frame should be stated in the syllabus with the Instructor office hours.
 - Should be corrective not critical

- Should be encouraging and not discouraging
- If remediation is needed refer students to remedial work to be done

Evaluate Effectiveness of your Course

- Mid-term course evaluations from students
- End-term evaluation from students
 - Institution driven evaluations
 - Informal evaluations developed by you to specifically identify problem areas in course that need correction

Revise, Revise, Revise and then what?

- Develop a course checklist with all the components necessary for a smooth running course.
 - Use checklist before opening to students.
 - Are all documents in compliance with rules and regulations?
 - Are all documents easy to find and use?
 - Are instructions easy and understandable?
 - Are all dates for activities, assignments and assessments correct and posted to the calendar, schedule, grading matrix, etc.?
 - Check all course links to make sure they work properly.

• Use: **How do You Teach – Colorado State University Checklist:** <http://accessproject.colostate.edu/udl/documents/howdoyoteachchecklist.pdf>

Use the Quality Matters Rubric - <http://www.qmprogram.org/rubric>

In Part 2 of Tips and Tidbits towards Building A Robust Online Course, I will introduce three effective Course Design Models I have used to build courses, as well as the Quality Matters Rubric.

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