



President's Column

Submitted by Sharon Duessel, MLS(ASCP)^{CM}
2014-2015 President ASCLS-MO

Greetings everyone!

As I begin my year as President, I have discovered two things: first, I did not realize what all the position entailed, and second, this is the best opportunity I have to help ensure the future of ASCLS-MO, ASCLS, and the lab profession.

My professional journey began for me in 2004 when my college advisor informed me of a program I had never heard of, Clinical Laboratory Science (CLS). As I struggled to stay focused through organic chemistry and cellular biochemistry I realized I needed to take my education in a new direction. I took an introductory class to CLS and instinctively knew that was what I wanted to do with my life. The program director decided to take a chance on me, and three years later I graduated with my Bachelor of Science in Clinical Laboratory Science.

I was introduced to ASCLS-MO (MoCLS at that point) when I was a student in 2006. My first memories of ASCLS-MO are of the conferences at Overland Park, Kansas and Lake of the Ozarks, Missouri. I enjoyed bonding with my fellow classmates at night, and attending fascinating sessions during the day. I have made long lasting friendships because of those conferences.

Looking forward eight years to the present, here I am, the President of ASCLS-MO. I don't know where I would be right now if my advi-

sor had not introduced me to clinical laboratory science; if Mary Lou Vehige (former Saint Louis University CLS program director) had not given a struggling student an opportunity, and if Tim Randolph (former State President) had not sought me out to hold leadership positions in the organization. These individuals have helped shape the leader that I have become today.

We have exciting things coming up this next year. The 2015 spring meeting will be held in Columbia, Missouri in April. Details will be available in the near future. In addition to the spring meeting, the District Representatives will be hosting local continuing education events. We also plan on having some fundraisers running throughout the year. Check out the new website <http://www.ascls-mo.org> for more information.

There are several things that an organization needs to succeed, and those are members, publicity, and funds. Our members are the most vital part of ASCLS-MO and we have a responsibility to them. However, we are not alone in this responsibility; we are all responsible for the future of ASCLS-MO. As a member, we need your assistance in helping to make this great organization even better by promoting the lab profession and encouraging your peers and coworkers to join due to the many benefits they can receive. Once we have the numbers, we can really make a difference! If you have any questions, please feel free to contact me at sharon.duessel.mls@gmail.com. I look forward to hearing from you.

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For submissions or suggestions in future newsletters please contact the Newsletter Editor Stephanie Godfrey at sasrunr02@gmail.com.

Nominations and Awards Committees

Submitted by Deborah Baudler
Past President ASCLS-MO

It is a perfect time to begin thinking about how you can become INVOLVED in the state chapter of ASCLS. We are a grassroots organization, made up of volunteers who believe that we can make a difference in our profession by belonging to a professional organization like ASCLS. We are continuously looking for members to hold both Committee and Board positions. Some of the voting board members are elected at the annual State meeting held every April and some are appointed by the current President. The time commitment is minimal and the rewards last forever. Some of the benefits of serving on a Committee or the Board include:

- Networking with other professionals from around the State, Region, and National ASCLS
- Participating in discussions at the State, Region, and National levels concerning laboratory issues
- Leadership opportunities, skill development, and continuing education credits
- Making new friends

Every year in the spring, the nominations committee makes a call for members to serve on the board. Right now is YOUR opportunity to find out more about how you can actively participate on the board, as a voting member or a committee chairperson/member. We have numerous ways for you to participate, so feel free to email me or Sharon Duessel, the current President, to find out how we can match your interests to the positions we have available.

Every year awards are also given out at the State, Regional, and National levels.

1. **Omicron Sigma**: is the President's Honor Roll for Outstanding Service. It provides lasting recognition of those dedicated members who volunteer their personal resources, time, and energy to ASCLS.
2. **Keys to the Future**: recognizes and rewards an ASCLS member who has demonstrated their leadership potential to the organization and provides this member with structured mentoring.
3. **New Professional of the Year**: recognizes a member who has contributed significantly to the field of clinical laboratory science and to ASCLS in their first five years in the profession.
4. **Member of the Year**: recognizes a member who has contributed significantly to the field of clinical laboratory science and to the state and/or national ASCLS in the past 5-10 years; and who has, by outstanding example, inspired others over that time as an active member in the organization.

2014 Award Recipients

- **Omicron Sigma**: Jacqueline Ensley, Nicole Mueller, Sarah Schumacher, Lucia Johnson, Alese Furnald, April Hansen and Amanda Reed
- **Keys to the Future**: Jacqueline Ensley
- **New Young Professional of the Year**: Alese Furnald
- **Member of the Year**: Lucia Johnson

I am currently compiling a list of past award recipients. If you have received one of the above awards and know which year you received it, please email me at djb368@sbcglobal.net so I can add it to our historical list.

65 and Counting, Happy Birthday ASCLS-MO!

Submitted by Mary Lou Vehige
Bylaws Chair

It is time to start the celebration! ASCLS-MO will be entering its 65th year on December 13. Our organization was formally recognized by the state of Missouri upon the approval of the Articles of Association by the Circuit Court, City of St. Louis, State of Missouri on December 13, 1949. The original name of the organization was the "Missouri

Society of Medical Technologists". As a flashback for some of our current members who may recall our early leaders, the following officers were the signatories on the document: Frances Moore, President; Sr. Mary Leo Rita (Volk), FSM, Vice-president; Jean Rutherford, Secretary; Patricia Thomas, Treasurer; and, Anne J. Sommer, Mildred Oswald, and Emma May Baldwin as Board of Directors. (Cont. on next page)



65 and Counting, Happy Birthday ASCLS-MO! Cont. from pg. 2

I am sure that at the time, they did not fully realize how strong of a foundation they laid through their dedication to our profession.

During my earlier years in the profession, I had the great fortune of meeting some of these remarkable individuals. I met Sr. Mary Leo Rita (1914-2011) when she was in her 70's. I gave her a ride home from a Saint Louis University (SLU) Homecoming event. In our conversation, she was so enthusiastic about our profession I could have spent hours visiting with her. I learned she had not only been a supervisor at St. Mary's hospital and professor at SLU, but also did pioneering work in cytogenetics and cancer. I also had the opportunity to serve on some ASCLS committees with Jean Rutherford who at the time was program director and an associate professor of Clinical Laboratory Science at Arkansas State University. Jean was very active in ASCLS and served in many capacities during her professional life. One very significant volunteer role was serving as a NAACLS reviewer and site surveyor of clinical laboratory science education programs to ensure the quality of the programs. These two individuals and their colleagues surely put us on the right path to meet the challenges of the next 65-plus years.

Of course, much has changed since 1949...we no longer use rabbits or frogs for pregnancy tests or mercury columns for CO₂ analysis! Among the many changes were name changes for our professional organization: Missouri Society for Medical Technology, MSMT (1960's), Missouri Organization for Clinical Laboratory Science, MoCLS (1994), and American Society for Clinical Laboratory Science -Missouri, ASCLS-MO (2014). Each name change corresponded to new directions, challenges, and a look to the future. Just as laboratory medicine is ever evolving, so is our professional organization. At the same time, we are anchored with the same purpose as outlined in the original Articles of Association and found in Article II of our current bylaws:

- To promote higher standards in clinical laboratory methods and research.
- To create mutual understanding and cooperation between clinical laboratory scientists (medical technologists), physicians and all others who are engaged in the interests of individual or public health, both within and outside of the State of Missouri.
- To encourage and foster professional discussion and dissemination of information among members of the profession of Clinical Laboratory Science (medical technology).
- To cooperate with all medical, hospital and community efforts in the prevention of the spread of disease and the promotion of individual and public health of the community.
- To promote higher standards for the profession of Clinical Laboratory Science (medical technology) through educational and scientific methods.

In general, to do anything and everything necessary and proper to the conduct of an association of this nature, and for the purpose of attaining or furthering any of its objectives to do any and all other acts and things, and to exercise any and all other power which now or hereafter may be authorized by law.

Our forebears must have had great insight. These listed purposes seem to have as much significance today in 2014 as in 1949. So let us celebrate this amazing legacy and continue to enhance our profession and ASCLS-MO with enthusiastic participation, continuous learning, and focus on the future. Happy 65th Birthday ASCLS-MO!

Ebola: Are You Prepared?

Submitted by Melissa DiMariano,
First Year Professional
and Monica Stumpf,
Student Director and Student Forum
Chair

Is your laboratory properly equipped to handle Ebola? With the first confirmed Ebola case to be diagnosed in the United States, laboratory professionals need to be prepared. The Ebola virus is responsible for causing viral hemorrhagic fevers. According to the World Health Organization, the average Ebola case fatality rate is around 50%. Ebola is not airborne but is spread through the blood and body fluids such as urine, saliva, feces, vomit, and semen. Since laboratory professionals handle all types of body fluids on a

day-to-day basis, it is crucial they are aware of how to protect themselves and reduce the risk of infection. Every specimen in the laboratory should be treated with caution and handled as if it is potentially infectious.

Although the current outbreak of Ebola is in West Africa and may not seem like a concern to laboratory professionals in the United States, the WHO Director-General declared this outbreak a Public Health Emergency of International Concern and it is imperative for laboratories to be equipped to safely control the infection and for all laboratory staff to be educated in the matter.

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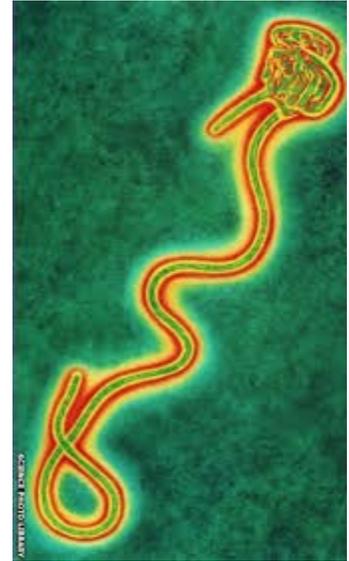


Ebola: Are You Prepared? Cont. from pg. 3

When performing lab tests on patient specimens suspected of having Ebola virus, always adhere to the OSHA blood-borne pathogen standard. The CDC recommends wearing proper personal protective equipment such as gloves, a water-resistant gown, a face shield/goggles or a mask that covers both the nose and mouth, as well as utilizing a Class II Biosafety cabinet or Plexiglas splash guard. Always dispose of medical waste in the appropriate hazardous waste receptacles and properly disinfect the work station after testing is complete. If you are exposed to any Ebola-suspected blood or body fluid in your eyes, mouth, nose, or broken skin, immediately clean the area with soap and water and contact your employer's Occupational Health department. If your laboratory has not already addressed Ebola preparedness in the workplace, ask your supervisor about protective measures.

References:

- <http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen-collection-submission-patients-suspected-infection-ebola.html>
- <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>
- <http://www.who.int/mediacentre/factsheets/fs103/en/>



New Membership Packages Available for ASCLS

Submitted by Deborah Baudler
ASCLS-MO, Past-President

National ASCLS has recently added **2 new packages** for Laboratory Managers and Colleges to register their employees or students at reduced rates. All non-student members will receive the same benefits as a Professional 1 member.

These membership packages entitle you and your institution to:

- **FREE** registration(s) to an ASCLS national meeting - the Annual Meeting and Clinical Lab Expo, Legislative Symposium or the Clinical Laboratory Educators' Conference (CLEC) - to use as you wish (number of FREE registrations varies by number of employees). This is a potential savings of \$1,200 or more!
- **FREE** downloads of your employees' completed continuing education (CE) to the Board of Certification (BOC). ASCLS will keep track of any CE earned by your staff with CE Organizer. We will send the information to BOC for the member's certification maintenance.
- A **15% discount** on all Medical Laboratory Professionals Week items.

For one fee, every staff member will have:

- Electronic access to the journal and newsletter; one hard copy would be mailed to a designated person for posting/sharing.

- Access to all ASCLS continuing education offerings and programs for FREE or deep discounts.
- This includes:
 - * FOCUS articles in the journal - FREE
 - * All online CE that ASCLS offers - FREE
 - * CE offered by ASCLS collaborating partners like MediaLab, DNA MedCafe, etc.

For more information and forms, please go to the ASCLS.org website and select the tab JOIN ASCLS and then ASCLS Membership Packages.



Ebola: Past, Present, Future

Submitted by Uthayashanker R. Ezekiel, PhD, MB(ASCP)^{CM}
Scientific Assembly Co-Chair

Ebola virus belongs to the Filoviridae (Filovirus) family and is comprised of five distinct strains: Bundibugyo, Cote d'Ivoire, Reston, Sudan and Zaire (1). Among these strains, Zaire shows a higher mortality rate and its highly lethal hemorrhagic fever was first identified near the Ebola River in Zaire in 1976 (1). In Africa, fruit bats are considered natural hosts of Ebola and its spread to humans occurs most commonly by handling infected chimpanzees, gorillas, monkeys, antelopes and porcupines (2). Secondary human-to-human transmission occurs by direct contact with blood, secretions or body fluids of infected patients (Figure 1). Symptoms usually present with abrupt onset and follow a 2-21 day incubation period (1). Initial infection typically presents with flu-like symptoms such as fever, myalgia and malaise. Spread of infection through the host causes severe bleeding (e.g. gastrointestinal bleeding), coagulation abnormalities and hematological abnormalities such as lymphopenia and neutrophilia (3). Unfortunately, Ebola symptoms may be easily mistaken for malaria, typhoid fever, dysentery, influenza or other bacterial infections.

PAST: The concept of passive immunization was initially described by Kitasato and Von Behring in 1890 when they showed that antibodies against diphtheria toxin protected guinea pigs from diphtheria infection. Later, it was proven that there are two forms of immunity: (i) active which occurs when a person's own immune system produces antibodies that activate immune cells to act against a specific pathogen; and (ii) passive which occurs when antibodies made by an external source are administered to and protect the patient from infection. The use of antibodies for Ebola treatment was initially performed during the 1995 Ebola outbreak in Kinshasa in the Democratic Republic of Congo (4). At that time, blood collected from 5 convalescent patients tested negative for Ebola antigen but positive for Ebola-specific antibodies and was used for transfusion into 8 Ebola patients. The outcome was that 7 patients recovered and only one died (4).

PRESENT: In the recent outbreak of Ebola infection in West Africa, there were 2 American missionaries (Dr. Kent Brantly and Nancy Writebol) who contracted Ebola infection. They both recovered from the infection because of passive immunotherapy. These 2 Ebola victims were treated with an experimental drug called ZMapp which is a combination of 3 monoclonal antibodies that specifically bind different epitopes on the Ebola virus (5). However, there was an insufficient amount of ZMapp to treat a 3rd American patient, Dr. Rick Sarca. The treatment he received was infusion of plasma from Dr. Kent Brantly which had high levels of Ebola-specific antibodies due to Dr. Brantly's recovery from the infection. Dr. Sarca, therefore, was also successfully treated by passive immunotherapy. In all 3 patients, ZMapp antibody or preformed antibody present in transfused plasma eliminated the microbial load of Ebola virus (5).

FUTURE: Zmapp is currently being developed by Leaf Biopharmaceutical Company in San Diego. Zmapp contains 3 monoclonal antibodies that have been humanized by genetic engineering (i.e., altered so that these antibodies synthesized in mouse cells display no murine but only human components). The 3 monoclonal antibodies were initially created by injecting Ebola antigens into mice. The mouse B cells were isolated from the spleens and fused with myeloma cancer cells to create hybridomas (immortalized fused cells). Hybridoma supernatants were screened for presence of secreted antibodies that specifically bound Ebola antigens. In the next step, genes that encoded Ebola-specific antibodies were genetically manipulated to remove murine regions for replacement with human regions in all areas of IgG molecule except in the region of the antigen binding site thereby creating Ebola-specific humanized antibodies. The cocktail of 3 humanized antibodies is Zmapp. These antibodies were then synthesized in tobacco plants and purified before use in humans.

In preliminary studies, the Zmapp antibody cocktail was shown to protect rhesus macaques and 4 out of 6 animals displaying little or no Ebola viremia (5). Although passive immunity has great value in saving lives, active immunity by vaccination is the better approach for life-long protection of human populations. There are a number of vaccines against Ebola currently in development. For one approach, the glycoprotein of vesicular stomatitis virus has been replaced with a corresponding protein from Ebola virus: this vaccine shows promise in protecting primates from Ebola infection (6). More approaches have been used for Ebola-vaccine development, such as attenuated rabies virus being used to deliver Ebola viral antigens and adenovirus that carries Ebola antigen (7). Another treatment candidate blocks Ebola virus replication. Since the Ebola genome is RNA, viral RNA polymerase has been targeted by a nucleoside analogue that causes chain termination or inhibition of viral genome replication. One such compound is BCX4430 (8), a broad spectrum antiviral agent that inhibits not only Filoviridae (virus family of Ebola) but also other viruses (8). Yet another virus inhibitor, favipiravir, is in late stage development for inhibition of influenza that also inhibits Ebola virus in cultured cells (9). While none of the above-mentioned therapeutic approaches have completed full clinical trials and therefore are not approved for regular use, they are allowed for treatment of Ebola victims as a "compassionate" drug since no other effective treatments are available. The recent Ebola outbreak and virus spread by global travel has caused increased momentum in bringing several candidate treatments to clinical trial completion so that they can be used in the near future to combat disease and help be better prepared for possible future outbreaks.

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Ebola: Past, Present, Future Cont. from pg. 5

The graphic below illustrates the narrative for this article.

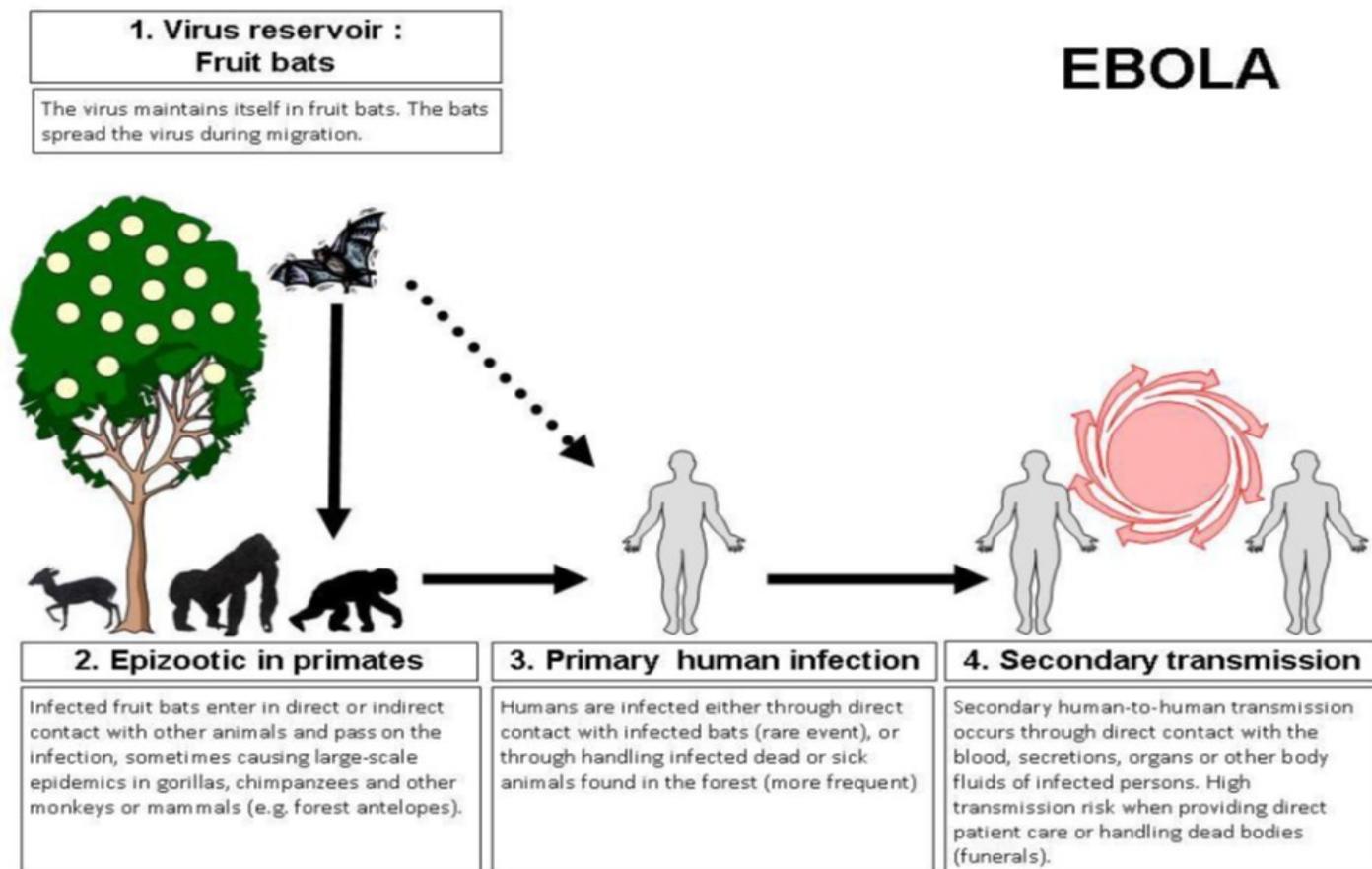


Figure 1. Hypothesis of how Ebola spreads to human from animal source (source: Ebola and Marburg virus disease epidemics: preparedness, alert, control, and evaluation. 2014 World Health Organization)

References:

1. Sullivan N, Yang ZY and Nabel GJ. Ebola virus pathogenesis: implications for vaccines and therapies. *J Virol.* 2003 Sep;77(18):9733-7.
2. Leroy EM et al. Fruit bats as reservoirs of Ebola virus. *Nature.* 2005 Dec 1;438(7068):575-6.
3. Ansari AA. Clinical features and pathobiology of Ebola virus infection. *J Autoimmun.* 2014 Sep 23. pii: S0896-8411(14)00130-9. doi: 10.1016/j.jaut.2014.09.001. [Epub ahead of print]
4. Mupapa K et al. Treatment of Ebola hemorrhagic fever with blood transfusions from convalescent patients. *International Scientific and Technical Committee. J Infect Dis.* 1999 Feb;179 Suppl 1:S18-23.
5. Qiu X et al. Reversion of advanced Ebola virus disease in nonhuman primates with ZMapp. *Nature.* 2014 Oct 2;514(7520):47-53. doi: 10.1038/nature13777. Epub 2014 Aug 29.
6. Mire CE et al. Vesicular stomatitis virus-based vaccines protect nonhuman primates against Bundibugyo ebolavirus. *PLoS Negl Trop Dis.* 2013 Dec 19;7(12):e2600. doi: 10.1371/journal.pntd.0002600. eCollection 2013.
7. O'Brien LM et al. Vaccination with recombinant adenoviruses expressing Ebola virus glycoprotein elicits protection in the interferon alpha/beta receptor knock-out mouse. *Virology.* 2014 Mar;452-453:324-33. doi: 10.1016/j.virol.2013.03.028. Epub 2014 Jan 24.
8. Warren TK et al. Protection against filovirus diseases by a novel broad-spectrum nucleoside analogue BCX4430. *Nature.* 2014 Apr 17;508(7496):402-5. doi: 10.1038/nature13027. Epub 2014 Mar 2.
9. Oestereich L et al. Successful treatment of advanced Ebola virus infection with T-705 (favipiravir) in a small animal model. *Antiviral Res.* 2014 May;105:17-21. doi: 10.1016/j.antiviral.2014.02.014. Epub 2014 Feb 26.

2014 Spring Conference

Submitted by Lucia Johnson, M.A. Ed., MT(ASCP)SBB
Tom Reddig Missouri Scholarship Fund Committee Chair



The 2014 MoCLS Spring Conference, in conjunction with KSCLS and KC CLMA, was held April 15-17 in Overland Park, Kansas. Every four years these organizations unite in the Greater Kansas City area for what has become known as the “Patchwork of Knowledge” conference.

This year’s conference included the following:

- Opening and closing keynote presentations
- 71 P.A.C.E.® approved educational programs, including a MLS student and new professionals’ track
- 38 vendors
- Vendor appreciation event - “Blues, Brews, & BBQ”
- 50/50 raffle for the three organization’s scholarship fund
- Candy bar sales for the Tom Reddig Missouri Scholarship Fund
- Student poster presentations

KSCLS provided P.A.C.E.® approval for the educational sessions and the ASCLS CE Organizer was used to provide official transcripts for attendees.

Registration numbers can be see on the right.

Candy bar sales for the Tom Reddig Missouri Scholarship Fund were \$638.00.

The conference yielded a net profit of \$19,793.62 which was divided amongst the three sponsoring organizations.

Listed below are the vendors that supported the conference by purchasing booths in the Exhibit Hall.

Full Member	60
Full Nonmember	20
Daily Member	50
Daily Nonmember	95
Full Student Member	10
Full Student Nonmember	35
Institutional Pass	25

List of Vendors

Abbott	CBC of Greater Kansas City	Nanosphere, Inc.
Abbott iSTAT	Center for Phlebotomy Education	Ortho Clinical Diagnostics
AB SCIEX	Cepheid	Platinum Code
Advanced Instruments	Diagnostica Stago, Inc.	Quest Diagnostics
Alere	DiaSorin	Quidel
Audit MicroControls, Inc.	Genoptix Medical Laboratory	Siemens Healthcare Diagnostics
BD Pre-Analytics Systems	George King Biomedical	Sysmex
Beckman Coulter	Greiner Bio-One	TELCOR
BioArray Solutions	Immucor	The Binding Site
BioFire - a Biomerieux Company	KS Dept. of Health and Environment	Thermo Fisher Scientific - Biomerieux PCT
Bio-Rad	Lab Corp	Thermo Scientific – Remel
Cardinal Health-Hettich Instruments	LABSCO	Viracor IBT Laboratories
CareEvolve	Mayo Medical Laboratories	WPM Pathology Laboratory Chartered





Meet Us In The Middle at the ASCLS-MO Spring Meeting

SAVE THE DATE

When: April 8-9, 2015

Where: The Broadway by DoubleTree,
Columbia, MO

Now accepting proposals for speakers & educational sessions.

Contact Kristine Hayes kristinh@macc.edu or
Alese Furnald furnalda@gmail.com for more information.



Medical Laboratory Professionals Week

Submitted by Stephanie Godfrey, MLS(ASCP)^{CM}
Second Year Board Director
MLPW Coordinator

Medical Laboratory Professionals Week (MLPW) will take place April 19-25, 2015.

This is an annual celebration of the medical laboratory professionals and pathologists who play a vital role in every aspect of health care. Lab Week is a time to honor the more than 300,000 medical laboratory professionals around the country who perform and interpret more than 10 billion laboratory tests in the U.S. every year.

MLPW is a time for medical laboratory personnel to celebrate their professionalism and be recognized for their efforts. Another goal is to inform and educate medical colleagues and the public about the medical laboratory and the impact of having these dedicated skilled professionals has on the overall patient care. Since medical laboratory professionals often work behind the scenes, few people know much about the critical testing they perform every day.

MLPW originated in 1975 as National Medical Laboratory Week, or NMLW, under the auspices of the American Society for Medical Technology, now called the American Society for Clinical Laboratory Science (ASCLS). In subsequent years, other organizations have served as cosponsors and campaign supporters.

References:

1. <http://www.ascls.org/about-us/celebrate/medical-lab-professionals-week>
2. <http://www.ascp.org/labweek>

