Career Advancement for Bench-Level Scientists in the Clinical Microbiology Laboratory

Clinical Microbiology Mentoring Subcommittee

AMERICAN SOCIETY FOR MICROBIOLOGY

Introduction

Careers within Clinical Laboratory Science, specifically Clinical Microbiology, are challenging and rewarding. Although not at the patient bedside, bench-level technologists play an integral role in the network of clinical decision making by providing accurate and critical information to the healthcare team. Those who are familiar with the duties and responsibilities of laboratory bench-work relish in the ability to contribute to patient care. However, many also seek the ability to progress within the field.

The goal of this document is to introduce bench-level clinical microbiologists to the opportunities which are available to those who seek to progress within the field while staying connected to the patient care that many revere. Here we present examples of positions which may be available to you within your respective institutions. Further, we also present suggestions which will help to enrich your experience and build your resume to help prepare you to be a competitive candidate for promotion. Note that advanced degrees (e.g. Ph.D., D.O., and M.D.) will not be covered here and are beyond the scope of this guide.

Overview of Career Paths

Depending on the size and infrastructure of your facility, there are two broad career paths that Clinical Microbiology Bench Technologists (CMBTs) are able to explore and ultimately enter - Personnel Management and Technical Management. For some small facilities, these may be one-in-the-same; however, for clarity we will explore each of these as if they are independent paths. We will cover items such as professional membership societies, specialty certificate opportunities, advanced education, and societal participation/volunteer suggestions. Additionally, we will also provide suggestions for resume building and the interview process.

As this will be a general overview, persons interested in specific opportunities within their respective institutions are advised to inquire with their human resource department or equivalent.

Personnel Management - Roles and Responsibilities

Depending on the management structure within your institution, this area may include positions such as laboratory operational managers, supervisors/assistant supervisors and lead technologists. The main focus of each of these have a varying level of responsibility specifically focused on the immediate direction of laboratory personnel. These positions are typically responsible for a range of responsibilities including: laboratory budgetary items, scheduling, proficiency and performance assessments as well as representing the laboratory in higher administrative matters. In smaller institutions, people in these positions can also serve the role as a human resource specialist, interviewing and selecting candidates for open positions. People filling these positions also act as an intermediary between the laboratory staff and laboratory director.

Technical Management – Roles and Responsibilities

Again, depending on the management structure at your institution, these positions may be separate from personnel management positions. Some examples of technical management titles are lead technologists, technical specialists, research and development technologists and quality assurance technologists. People holding these positions are the "go-to" technologists for troubleshooting and immediate technical guidance. They are also involved in training newly hired technologists. Because of the breadth and scope of clinical microbiology, many larger institutions will break-up the laboratory benches into specialty areas with a technical specialist assigned to one or more bench. As would be expected, these persons also handle some of the more immediate personnel management, severing as an intermediary between the technologists and the laboratory supervisor, director, etc.

The modern laboratory has become highly computerized and laboratory automation equipment is emerging within the realm of the clinical microbiology laboratory. These factors require network and interface infrastructure support unique to information technology (IT). In many institutions, laboratorians are trained on-the-job in order to bridge the gap between IT and the laboratory. Further, institutions are migrating to new laboratory information systems (LIS) which are more compatible with modern electronic medical records (EMRs). The result in some institutions has been the creation of a technical management position which specifically fosters the IT-LIS realm. As technology continues to press forward, these positions will become ever more important and influential in the day-to-day operations of laboratories.

In summary, laboratory management positions are highly sought after and can lead to even higher positions within the institution's administrative network. Usually the positions require higher expectations of responsibility, skill, knowledge, ability and experience. In order to become a competitive candidate, there are many avenues to pursue to meet these requirements. We have put together a selection of items which may help you to meet these expectations.

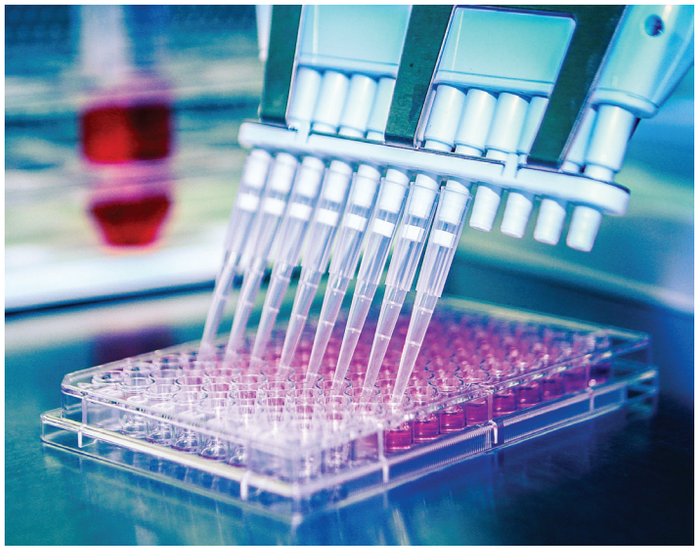
Education and Advanced Certification:

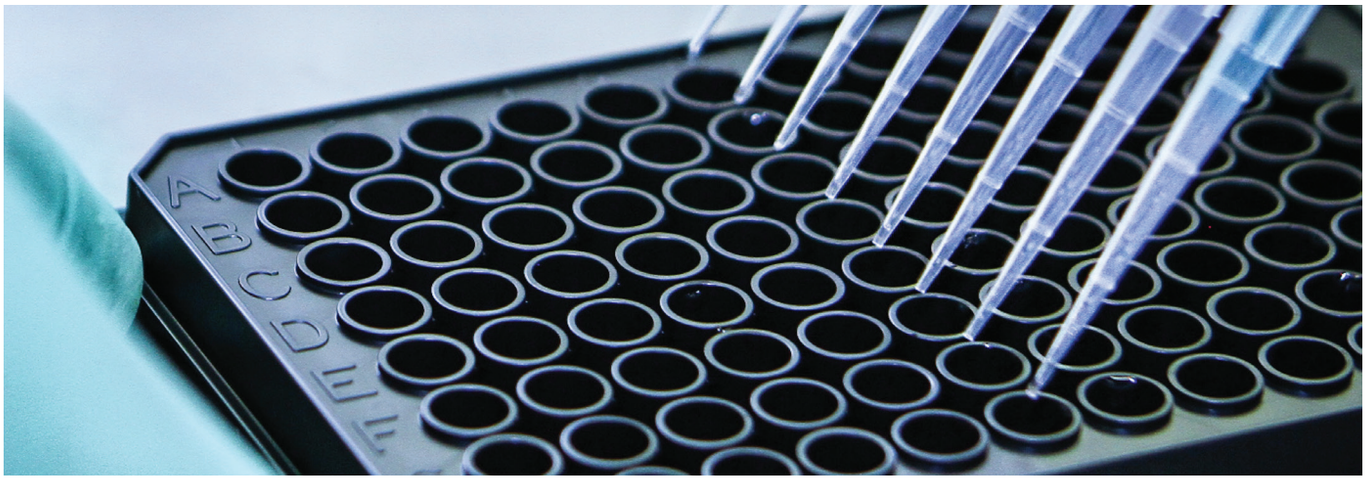
In general, people in the clinical microbiology laboratory hold 4-year degrees in the biological sciences, chemistry or clinical laboratory science (formerly medical technology). Some may also hold a 2-year degree (e.g. medical laboratory technician) or have been trained on the job prior to CLIA '88 regulations (e.g. HEW certification). In many institutions, it is highly desirable for management candidates to possess at least a 4-year degree. Possessing an advanced degree, such as a Master of Arts (MA) or Master of Science (MS) is sometimes preferred by hiring institutions and can facilitate an earlier entry into management positions. Depending on the function of the position sought

(i.e. technical, administrative), a specific advanced degree may be preferred over a lesser degree. For example, a supervisory role which focuses on administrative tasks may prefer master's degree in business or healthcare administration; whereas, a position focused on the technical aspects of the laboratory may prefer a master's degree in a closely related science. It may also be advantageous to pursue a specialty certificate in an appropriate area of microbiology. The National Registry of Certified Microbiologists (NRCM) certifies professional microbiologists in food safety and quality, pharmaceutical and medical device, and biological safety microbiology at the baccalaureate, master's, and doctoral levels.

Clinical Microbiology Certification

The American College of Microbiology and the American Society for Clinical Pathology (ASCP) conjointly develop and administer certification exams in clinical microbiology at the bench and supervisory levels. Individuals must meet ASCP eligibility





requirements to take the exam. Those who pass the exam are certified as a Technologist in Microbiology (M) or Specialist in Microbiology (SM) by the ASCP and are issued a certificate with both organizations' names on it. For more information on eligibility, visit https://www.ascp.org/content/board-of-certification/getcertified.

In small to medium sized facilities, a person with an adequate experience level (or offsetting education) is usually well suited to fill a management position. There are diploma-specific certificates that can be acquired through professional organizations, which also prepare for management positions and may provide a competitive advantage to a candidate (see table below: Resources – Professional Certifications). There are a variety of programs available through organizations such as the ASCP and American Association for Clinical Chemistry (AACC), which result in an advanced certification through formal training programs and board examinations.

Currently, there are 12 states and 1 U.S. territory which require licensure for all clinical laboratorians. Additional licensure may or may not be required for laboratory management staff. If you live in or are applying for a position in one of these states, it is important to know the specific requirements and have documentation prepared in advance to thwart unwanted surprises. ASCP has web-based resources that contain contact information for all states requiring additional licensure (http://www.ascp.org/Board-of-Certification/State-Licensure).

Before pursuing any advanced degrees or training/certification, persons should consider their career goals carefully. Advanced education and certification are a monetary investment and require significant time commitments!

Laboratory Community Involvement

Becoming involved in a laboratory professional organization at the local/regional level is also an excellent resume and networking opportunity. ASM has several local/regional affiliated branches (http://www.asm.org/index.php/branches2) which meet regularly. Some offer opportunities to present work in poster or public lecture formats without the extensive travel commitment required to present at the national ASM general meeting.

Participation in organizations at the national and international level is also now possible through various internet portals. ASM offers an email forum (DivC listserv) which serves to bring members from across the U.S. and globe together to share resources and problem-solve informally. There are also forums and "chat-rooms" where technologists can share ideas and experiences through ASCP and other professional organizations.

Regardless of the measure that one can commit to these organizations, participation at any level is invaluable.

Summary

In conclusion, technologists interested in advancing their careers in the clinical microbiology laboratory should be aware of the multiple certificate programs and advanced education opportunities available. Advanced training and education are essential components to building a strong resume and background needed to become a competitive candidate for promotions.

Below are tables with a selection of resources and references for certification opportunities, advanced education and training programs, and tips on resume creation. It is important to recognize that these are only a selection and persons are encouraged to seek out guidance by networking within and outside of their respected facilities.

Resources – Resume/CV Writing

Resources for formatting and creation of resumes and CVs:	Web Site Address
In order to decide on which format is best, applicants should familiarize themselves with the criteria provided by the employer. When applying internally, contact your human resources department. If applying for an external position and you are having trouble determining the best format to submit, contact the employer's human resource department or the contracted hiring agency for instruction.	https://writingcenter.unc.edu/handouts/curricula-vitae-cvs-versus-resumes/
	http://www.gradschool.cornell.edu/career-development/put-your-qualifications-writing/curriculum-vitae-cvs

Resources – Professional Societies and Organizations

Name	Web Site Address
American Board of Bioanalysts	http://www.aab.org/aab/American_Board_of_Bioanalysis.asp
American Medical Technologists	http://www.americanmedtech.org/
American Society for Microbiology	https://www.asm.org/
American Society for Clinical Laboratory Science	http://www.ascls.org/
American Society for Clinical Pathology	http://www.ascp.org/
Clinical Laboratory Management Association	http://www.clma.org/
Association for Molecular Pathology	http://www.amp.org/
American Association of Clinical Chemistry	https://www.aacc.org/

Resources – Professional Certifications

Certification	Information Link (for details on experience and education needed)
Medical Technologist (MT), AMT	http://www.americanmedtech.org/GetCertified/MTEligibility.aspx
Medical Technologist (MT), AAB	https://www.aab.org/aab/MT.asp
Technical Supervisor (TS), ABB	http://www.aab.org/aab/TS.asp
General Supervisor (GS), ABB	http://www.aab.org/aab/GS.asp
Diplomate in Laboratory Management (DLM), ASCP	http://www.ascp.org/content/board-of-certification/getcertified (navigate to 'Eligibility' tab)
Medical Laboratory Scientist (MLS), ASCP	http://www.ascp.org/content/board-of-certification/getcertified (navigate to 'Eligibility' tab)
Specialist in Microbiology (SM), ASCP	http://www.ascp.org/content/board-of-certification/getcertified (navigate to 'Eligibility' tab)
Technologist in Microbiology (M), ASCP	http://www.ascp.org/content/board-of-certification/getcertified (navigate to 'Eligibility' tab)
Technologist in Molecular Biology (MB), ASCP	http://www.ascp.org/PDF/BOC-PDFs/procedures/Examination-Procedures.pdf

Resources – Advanced Degrees

Certification	Information Link (for details on experience and education needed)
On-line Master of Science (MS) Programs:	http://www.unk.edu/academics/biology/index.php
	http://www.clemson.edu/cafls/departments/biosci/graduates/biol_online/
	http://www.wku.edu/online/grad-programs/ms-biology/
Comprehensive list of CLS and MS-CLS programs (on-line, mixed and traditional)	http://www.ascls.org/careers-ascls/mls-programs-lists
On-line Master of Public Health Programs: (accredited, not-for-profit schools only listed)	http://publichealthonline.gwu.edu/
	https://www.umass.edu/sphhs-online/
	http://health.usf.edu/publichealth/onlineprograms/
	http://onlinemph.berkeley.edu/
	http://www.jhsph.edu/academics/degree-programs/master-of-public-health/
	http://mphdegree.usc.edu/
On-line Master of Business Administration: (comprehensive, ranked listings by US News and World Report)	http://www.usnews.com/education/online-education/mba/rankings
On-line Master of Healthcare Administration: (comprehensive, ranked listings by MHADegree.org)	http://mhadegree.org/online/

asm.org

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