

 Dept - (BHES) Medical Laboratory Technician > Department > Program Review



Department Chairs/Program Leads: Please press the edit symbol in the right-hand corner to update. 

Below, the text in bold corresponds both to the name of the box when editing this page and also to the first-column on the APRU worksheet. If you have questions, please contact: papemary@fhda.edu.

▼  **Dept - (BHES) Medical Laboratory Technician** 

Program Mission Statement: The mission of the De Anza College Medical Laboratory Technician Program is to provide students with the technical skills, knowledge, and critical thinking skills needed to perform routine clinical laboratory testing in all major areas of the laboratory. In addition, we hope to give students the desire for lifelong learning and to be a vital part of the community.

I.A.1 What is the Primary Focus of Your Program?: Career/Technical

I.A.2 Choose a Secondary Focus of Your Program?: Transfer

I.B.1 Number Certificates of Achievement Awarded: 3

I.B.2 Number Certif of Achievement-Advanced Awarded: 1

I.B.3 #ADTs (Associate Degrees for Transfer) Awarded:

I.B.4 # AA and/or AS Degrees Awarded: 1

I.C.1. CTE Programs: Impact of External Trends: According to the EDD website the growth for MLT in Santa Clara County and the Bay region continues to increase. For only Santa Clara is expected to have a 22% increase in demand for these jobs. An estimated 40 openings per year. Overall in the state of California, the outlook is for over 800 jobs per year. About half due to new employment and half due to replacements. The program has received calls from clinical sites looking for recent graduates to fulfill job openings. The average starting salary for this field in this area is about \$30/hours.

1) Trends: Increase the curriculum for molecular testing. The technology is changing in the laboratory to include much more in molecular based testing. It is imperative to incorporate these technologies into our curriculum to make sure the students are prepared for the available jobs. The program will need funding to obtain this instrumentation. It is possible with new funding source that some of this equipment will be purchased. A needed instructor to effectively teach this new technology. A need to incorporate pre analytical techniques is an increasing desire of employers. The program has a few laboratory computer systems to aide with this learning. Again, an instructor to create a course so this skills can be incorporated into all the curriculum courses.

2017: Due to need to replace failed equipment the program is unable to purchase molecular equipment this year. With SWI money next year, the plan would be to



purchase at least one piece of equipment for molecular. The industry regulations are changing; quality control will now incorporate all aspects of the testing, including pre-analytical under the IQCP (Individual Quality Control Plan). The labdaq system is helping our students prepare for the new requirements in the industry. This year with help of SWI the program is able to pilot a skills laboratory where the students can self identify their needs for basic laboratory skills and practice with an instructional aide (Allied Health Specialist). The students will also be able to get some basic tutoring for the courses.

2) Future plans: A current limitation to the growth of the program is the lack of clinical sites and the lack of current sites to commit to taking students on regular bases. This past year 3 new clinical sites were added to the program. Two of these are committed to train one MLT per year. An improvement over the previous years. The downside is one clinical is not taking trainees.

It is a constant struggle to keep clinical sites, and sites to keep their commitment to training. A partnership with business and schools would be helpful to cement this relationship. This would help the program grow.

I.C.2 CTE Programs: Advisory Board Input: De Anza College's MLT program relies on feedback from the Advisory Committee to ensure that our training program meets the needs of the community employers. The Advisory Committee recognized the severe shortage of clinical laboratory professionals in the Bay Area and throughout the state. They praised De Anza College's MLT program for its innovation, and curriculum which is adequately preparing students to pass the national certification examination for entry level positions in the clinical laboratory. San Jose State and San Francisco state CLS programs continue to recommend the DeAnza program to students that are needing prerequisites for their courses.

The advisory meeting is coming up for spring quarter, the hot topic will be the new release of "The State of the California Medical Laboratory Technician Workforce" research that was undertaken to describe the state-level differences in the supply of MLTs in California compared to other states, compare scope of practice laws regulating MLTs in California with other states that also regulate MLTs, and explain how the use of MLTs, particularly with regard to three areas of testing identified as a priority by the HLWI, might impact workforce and workflow efficiencies. This study will help fuel the push for changes in the state regulations to allow MLT's to increase their scope of practice and thus increase their value to the clinical workforce.

With an increase in funding for instrumentation replacement we are able to provide students with the skills they need for entry level jobs. This includes specimen entry, which has been introduced this year with use of the LabDaq system purchased by Measure C money. With SWI funds we will be able to purchase several pieces of equipment that must be replaced for the UA, Coagulation and Chemistry laboratories. This is very helpful but only replaces dead or unsupported, outdated equipment. A budget that incorporates a continuous replacement plan for equipment is needed. Funding for new technological equipment must also be a consideration. The program



will hire a person to help pilot a skills laboratory for added time for students to master basic laboratory skills. We are hopeful that funding will continue at this pace so we will be able to permanently add staffing for the infrastructure of the program.

A continual issue is; obtaining a certificate and/or degrees from the college. Most students come into the program with a degree and therefore only are qualified for a certificate. The state license is the needed certification for employment. There are too many barriers to obtain a certificate at the college. Many students are unaware or not able to negotiate the degreeworks website, many have completed requirements, but lack of good communication between the department, student and program there are misunderstandings as to what is needed to fulfill or complete the certification. The biology counselor, CTE dedicated person, Ashley, and the counselors are in place, we just need additional personal in the program to aide in this process is needed. Having only one FT instructor is not enough to process all the MLT students application and make sure that all requirements are met in a timely fashion.

Lack of clinical sites for externship is an issue and efforts are in progress to increase the number of sites. This is an ongoing problem (across the country), however, a good partnership with business would go a long way to help provide funding to the clinical sites to help cover their costs to train personnel.

I.D.1 Academic Services & Learning Resources: #Faculty served:

I.D.2 Academic Services & Learning Resources: #Students served:

I.D.3 Academic Services & Learning Resources: #Staff Served:

I.E.1 Full time faculty (FTEF): 2.5

I.E.2 #Student Employees:

I.E.3 % Full-time : One full time faculty and 10 part time faculty teach all courses. According to the data sheet, there is a slight decrease, however this does not include the overload.

I.E.4 #Staff Employees:

I.E.5 Changes in Employees/Resources: The program is in need of a permanent part time staff position for aid in the class room laboratory for the safety of the student.

This person needs to have the background and skills to aid the students in performing skills for the safety of all in the laboratory. This individual can also support students as a tutor for concepts and skills. The lack of a position was significantly noted by the students. In order for the program to grow and maintain a good reputation the safety and quality in the lab is a must.

2017: With SWI funds the program has hired a person to help pilot the skills laboratory and would like to use this funding in the future to hire a permanent lab aide. Currently, Perkins funds are used to hire a temporary person for this position. Perkins funds for this position will be ending as this was a temporary measure. As noted above, the students notice a significance difference in the courses without the laboratory Allied Health Specialist.



II.A Enrollment Trends: The MLT program is operating beyond maximum capacity in relationship to its funding, space and especially staffing. The programs enrollment increase 15% over last year. We are still impacted and students are waiting a year to enter the program.

The college has shown an increased commitment to support this program in terms of faculty and funding.

II.B.1 Overall Success Rate: Our student success rate for students was up 3% to 86% from last year. The withdraw rate was down so the students that did stay were successful.

II.B.2 Plan if Success Rate of Program is Below 60%:

II.C Changes Imposed by Internal/External Regulations: De Anza's MLT program is nationally accredited by the National Accreditation Agency for Clinical Laboratory Science (NAACLS) and the State of California. Therefore, our curriculum teaches to the national standards, which are more comprehensive than the state regulations. Our governing state agency, Laboratory Field Services is in the process of revising the CA state MLT regulations, expanding the scope of practice of MLT's. Because De Anza's MLT program is already teaching an expanded curriculum, our graduates will be equipped for this change and not be required to return for further education.

A review of the scope of practice for MLTs to include microscopy which would be in line with other states has just been released and conversations over this document will be starting with the goal of changing state regulations for the MLT field.

The need is high for these well trained licensed professional and the DeAnza program is well set to teach to the standards of NAACLS and to the needs of local employers.

III.A Growth and Decline of Targeted Student Populations: De Anza's MLT Program has provided career opportunities to a diverse group of students since its inception in 2004. The class makeup has shifted over the past several years to include many of the targeted groups. Outreach to specified target populations has been accomplished through aggressive marketing and student recruitment of our MLT program throughout the community and clinical laboratories. Many of our students hear about the program through word-of-mouth and our program is recommended by both two of the state universities in the area.

Over the past four years, our targeted student enrollment has had a steady increase.

African-American population has remained the same but we have seen a 32% increase in Filipino's and 165% increase in Latino's.

The overall success rate for the targeted group has been increasing faster than the non-targeted group and is now the same at 86% success rate.

III.B Closing the Student Equity Gap: The MLT program faculty is committed to student success of all enrolled students. The success of both groups is the same this year. The withdraw rate is slightly higher for the targeted group, but of those that persist are successful. The focus and goal will be to decrease the withdrawal rate. A skills laboratory will intervene early in the schooling so that all students will have the

needed technical skills to move forward and be successful in the program.

2017: The current equity gap is zero. To sustain this balance the program must keep the faculty support, counseling help and lab skills at the level that is required by the accreditation and the expectations of the community employers.

1) With some increase funding; the program plans to purchase technology that will replace old equipment. The program will be able to incorporate newer technology and updated equipment to better the students skill development. With continue funding, the program, will be able to advance the technology.

2) There is a need to aid students in navigating the academic system to obtain degrees, certificates and evaluation of transcripts for meeting prerequisites. Now with a dedicated counselor for the science division this should help increase the certificates the program awards and make it easier for the students to know if and when they have met prerequisites. More communication and co ordination of services is needed to increase the number of students obtaining certificates. A strategy to reduce roadblocks is needed, a liaison to help facilitate for the students is needed. This could easily be the person in charge of the skills laboratory.

3) Perkin Funding was restored, temporarily, for an Allied Health specialist to aide in the classroom. Not only were these individuals able to help the instructors with set up of the laboratory but also were tutors for the students during class reducing the student/instructor ratio from 1/20 to 1/10. An important difference was noticed by the students in student evaluations. The student/instructor ratio is very much a safety concern for the instructors. The instructional help from the health specialist for the students aid in their success during classes as well as mentoring them for success in their externships. With the increase funding from the Strong Workforce Initiative, this position will, hopefully, be filled on a permanent basis.

III.C Plan if Success Rate of Targeted Group(s) is Below 60%:

III.D Departmental Equity Planning and Progress: De Anza College's MLT program's main areas for improvement included: program growth which would help to eliminate the impacted student enrollment.

Through recruitment, marketing and program reputation (which is credited to the relentless efforts of the previous MLT program director) throughout the Bay Area, there are more students interested in the program than we can accommodate, leading to impacted enrollment. In order for the program enrollment to increase, additional clinical training sites are needed to accommodate this additional growth. We were able to increase our affiliates with 3 additional clinical training site that are committed to training our MLT students. Another site is considering the possibility of training. As important, 5 of our current sites are committed to train at least one student per year.



.This is certainly progress, moving towards increased program enrollment, however there is much more to be done and the program lacks sufficient personnel support to accomplish these goals.

The program operates with 1 full-time faculty member and no administration support.

To increase clinical sites required time in recruitment which is difficult for a single person.

The program coordinator is responsible for maintaining the program's national accreditation and state approval, all administrative duties, marketing and student recruitment, maintaining laboratory instrumentation, laboratory preparations, and instruction. The demands on the MLT Program Director and the lack of adequate staffing limit the growth of the program.

The MLT program has used some of its vocational program funding to hire professional experts to assist students in the classroom. Tightness of the funding rules for this source can no longer sustain the professional health experts so another source of funding must be identified to create a permanent position. The SWI funding will partly be used to fund this position. This position will help to continue to close the equity gap and increase the success of all students and especially the targeted group of students. These health professionals have the knowledge and technology skills to aid the students in the laboratory for additional tutoring, lessen the instructor to student ratio for safety, and mentor students for clinical training success.

IV.A Cycle 2 PLOAC Summary (since June 30, 2014): 100%

IV.B Cycle 2 SLOAC Summary (since June 30, 2014): 100%

V.A Budget Trends: De Anza College's MLT program receives funding from several sources. The MLT Program Coordinator and part-time faculty are paid for by De Anza College. Our program received a B budget of \$895 in 2015-16. The MLT program's supply/operating budget excluding faculty salaries is \$40,000. The program supports itself through a grant from Healthcare Laboratory Workforce Initiative and funding from Perkins. Without these outside funding sources, the program cannot be maintained. The HLIW funding is not a guaranteed renewal and may very well not be replenished so it is important to recognize other school based funding sources for this program to be sustainable.

Our division budget has not changed in the last couple of years and an increase is needed to help maintain some of the supplies, scope maintenance and limited printing for the program and outreach efforts. This past year the program received some lottery money that will help pay for study guide books for the students and other in class room educational material.

Larger sums of funding from SWI, will be used to fund replacement equipment this year. If the funding continues the program will be able to purchase "newer" technology and simulation programs.

V.B Funding Impact on Enrollment Trends:

The good news is that the program received money from two different sources to help supplement equipment. This new equipment was replacement for out of date and



expired instrumentation. It is important to establish a renewal plan for funding as technology changes and the need to replace outdated equipment in a five to seven year plan.

The funding this past year has allowed for replacement of UA, Coagulation and chem analyzers as well as some of the disposals used in testing. The goal is to be able to introduce molecular techniques with the purchase of this equipment to keep current for the job market and to maintain the high standards of the program. The instruments are the component of the program that allows the students the "hands on" experience necessary to be successful in the work place. This "hands on" before the externship is one of the most valuable aspects of the program, according to student feedback.

Lack of clinical sites, continues to be biggest factor in limiting enrollment. As the demand for the programs grows some changes may need to be made in the admissions process. A recency requirement has been discussed, this would allow students to "refresh" their knowledge and thus be able to keep up with the pace of the class, cutting down on repeaters,

V.C.1 Faculty Position(s) Needed: Growth

V.C.2 Justification for Faculty Position(s): Part-time faculty for skills lab. This year, we are able to hire a person until the end of the year as a trail period that we hope will become an important part of the program. Students need more time to practice lab skills and have expert help to tutor on techniques, math and understanding general concepts in the clinical field. This is an unique program that requires special knowledge to tutor these skills.

Part-time faculty position for additional blood bank training is needed. Some clinical sites do not offer much training in bloodbanking and this additional training allows us to add clinical sites and thus increase the number of students we can accept in the program.

V.D.1 Staff Position(s) Needed: Growth position

V.D.2 Justification for Staff Position(s): Permanent: part time professional health expert to aid the instructor during the laboratory sessions by adding valuable instruction and demonstration of needed laboratory skills to increase the success of students in the classroom and prepare them for the workforce.

One of the NAACLS standards require that the school ensure the appropriate personal safety for students and faculty are safe guarded during educational activities. This is not possible with a 1/20 ratio in the laboratory. An additional person in the laboratory would reduce this 1/10 a more manageable number.

This position should be a professional expert that has the knowledge and skills of the clinical laboratory to aid the instructor in presentation of material, answering questions, giving additional tutoring and demonstration of skills for those that are in need.

The lack of this position and its direct effects on students was noted in the student evaluations and also noted on the tenure review.

2017: an administrative assistant is needed for the program to continue to growth.



Currently all administration is done by one full time faculty. This includes, program review, ordering and budget, student tracking, preparation for exam, maintaining accreditation, recruiting, hiring, aid with SLO and curriculum. This is in addition to the responsibilities of a full time instructor. The program currently has 8 students in externships, 3 students that are still being tracked as they have not taken the exam and at least 5 students ready for externship at the end of spring quarter. There are additional (roughly) 20 students that are still working their way through the academic portion of the program. This does not include all the students that are taking courses as prerequisites for the CLS program.

V.E.1 Equipment Requests: Over \$1,000

V.E.2 Equipment Title, Description, and Quantity: Please see attached Worksheet for equipment: AND the list below

Microscopes, - , these should be on a 5 year recycle program

New chairs- 30 more ergonomically formed

New Chemistry Analysers -1 (2Tosoh 600II are no longer supported by the company)

Will replace one this year

Cepheid Smart Cyler for molecular testing

VeiwslQ:integrated computer/camera/software for real-time panoramic images and ability to create in-house library of slides and aide in creating on line classes. Five monitors or High definition projection screen or TV

Chemistry and immunoassay analyzer, microscopes, refractometers, centrifuge, heat block, cell washers, spectrophotometers

urine strip reader X2 and coagulation analyzers

electrophoresis equipment, glucometers

NEW: Molecular equipment, thermocycler (Cepheid or Focus), processing equipment, Dna/rna extraction using acid tubes and Ez1 the base model runs about 1-6 samples PLO to provide needed training so students are prepared to enter the workforce with the needed skill level.

Ergonomically correct chairs for students doing microscopic work to decrease chances of injury (new)

Freezers and Refrigerators replacement

Hematology analyzer, replacement

New Coagulation and Urine Analyzers

Mass Spectrophotometer

Centrifuges, serofuges, cell washers, incubators,

New instrumentation for identification of clinical bacteria

All new technology instruments to keep current in the field

Equipment for data entry and tracking of specimen data

New computers and other technology to keep the current "smart classroom" up to date

Under \$1000

Graph paper for Chemistry, small calculators for in class math skills, test tubes, plastic



and glass, media for micro courses, pipette tips, plastic loops, slides, biohazard containers, identification kits, gloves, replacements of pipettes and lab supplies as needed

V.E.3 Equipment Justification: Technology is increasing in the laboratory and for the program to stay current and prepare students for clinical rotations and jobs it is crucial to keep up with the demands of the employers and the skills they expect the students to have on graduation.

See above.

Yes all equipment requests are from SLOAC and PLOAC process

Infrastructure as needed

Instructional equipment includes a camera and microscope that allows the program to build their own library of photographs for teaching and multiple disciplines.

Equipment is used by students to get the hands on experience needed to be successful in the work place. In order for the program to maintain its high standards and great reputation with the business community it is important to have equipment and technology that is representative of what is expected/demanded by employers. Most equipment has a planned five year obsolesce

The goals of the college are for CTE graduates to have the knowledge, skills and positive learning attitude that is valued by the employers. Keeping the technology and equipment current is an integral piece to each students education and the program. .

V.F.1 Facility Request: High definition projection screen/TV to view slides from the VeiwslQ system

New classroom space - a simulation lab is the direction that many programs of this kind are heading towards as this will give the students the "hands on" time that is required and may potentially lead to shorten rotations in the clinical setting. This could make training more attractive for clinical sites.

Ergonomic chairs for students

Desk

Smart classroom

Sink with foot pedals

Cabinets for storage, microscopes, etc.

White boards

Abundant outlets for lab equipment

Biological Safety Cabinets

Additional storage space

Shelfs

Cabinets

Freezers

Refrigerators

Electrical outlets

Cold Storage Room



V.F.2 Facility Justification: In order to utilize the Veivs IQ system to its fullest capacity a high definition viewing system is needed. This could be an upgrade to the current projector in the classroom, a high definition TV or 5 monitors for the students to use in groups.

For the program to grow, more classroom space is needed or more faculty to teach more sections in a "flipped" classroom. Much of the work in the laboratory requires microscope work and the desk and chairs are not adjustable. This may lead to back and other strain injuries.

V.G Equity Planning and Support: For the program to grow, more classroom space is needed as well as more faculty to teach students for effectively and more hands on experience during their training. More exposure students have to laboratory techniques the more likely they are to be successful in their course work and jobs. A simulation laboratory setting is the goal.

V.H.1 Other Needed Resources: Assistant to help guide students to the resources already available to students, biology counselor, CTE job resume/interview skills. More communication and coordination is needed between these entities and the program. Hiring our MLT students as tutors for our program. The information and skills are very specific and is difficult to find a "general" tutor.

Partnership with the community to find funding to pay clinical sites to train students. These sites will be more likely to train if the financial burden is shared.

Start a donation funds for the program. Graduating or former students that would like to give back to the program could donate funds that could then be used to off set the externships cost for students. The externship is 6 months of full time training with no pay. This prevents some of the targeted student groups from participating in this career.

V.H.2 Other Needed Resources Justification: One area is specific math skills for the laboratory. Low scores on testing compare to the general knowledge questions of the exams. The pilot skills laboratory program will help to evaluate what exactly are the needs of these students.

V.J. "B" Budget Augmentation: "B" budget for the MLT program annually is \$800/year. This past year some lottery money was added to this budget which was very helpful. A minimum budget of \$2000/annually is needed.

Additional funding of the SWI and including Perkins Funding will hopefully be sustained so the high quality of the program can continue and meet the needs of the community.

V.K.1 Staff Development Needs: CLEC once per year, good for all instructors to attend and network . This is the most important meeting of the year and the only one that focuses specifically on teaching to clinical scientists. The information is invaluable

so it is important that all instructors be included.

It is important that the faculty stay current in the ever changing health technology field. The CLEC (Clinical Laboratory Educators' Conference) meeting (once per year) is specific for clinical science educators to gather and share ideas and learn new skills for the class room. The meeting also has information about current technology with company representatives present to answer questions and publishers are present to show off the latest textbooks and how to create or customize your own textbook.

V.K.2 Staff Development Needs Justification: The CLEC (Clinical Laboratory Educators' Conference) meeting (once per year) is specific for clinical science educators to gather and share ideas and learn new skills for the class room. There is no other meeting of this kind Many times these are out of state but the information and knowledged shared and learned is valuable.

This meeting helps all us be better teachers as it addresses both academic, communication and wellbeing skills that can be transferred back to the classroom.

Faculty can tailor the information to their specialty.

This years conference focused on students,especially, the millennials learner and to make class room adjustments to meet their needs.

Several of the faculty are ready for re-employment consideration.

V.L Closing the Loop: We will re assess the outcomes based on our student retention and success rates especially for the targeted student populations.

Submitted by: Patricia Buchner

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APRU Complete for 2016-17: No

#SLO STATEMENTS Archived from ECMS: 19

