

# **MEDICAL LABORATORY SCIENCE**

**Brigham Young University**

## **Student Handbook**



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Welcome to the integrated medical laboratory science (MLS) program. This program will consist of two semesters at BYU and concludes with a 16-week clinical experience at one of our affiliated hospitals. The program is accredited through the National Accrediting Agency for Clinical Laboratory Sciences (5600 N. River Road; Suite 720; Rosemont, IL 60018; 773-731-8880). Upon completion of the program, the graduate is eligible to take the MLS certification exam sponsored by the American Society for Clinical Pathology (ASCP). Please let us know immediately if you plan on taking the California state licensure. If you do, you will need to request to have your clinical rotation lengthened by an extra 16 weeks. Those hospitals with which BYU is affiliated include: American Fork Hospital, ARUP, Ashley Regional Medical Center, Central Valley Medical Center; Eastern Idaho Regional Medical Center, Intermountain Medical Center, Madison Memorial Hospital, Mayo Clinic, Mountain View Hospital, Primary Children's Hospital, Renown Healthcare, Spanish Fork Hospital, St. Mark's Hospital, St. Mary's Medical Center, Timpanogos Regional Hospital, TriCore, and Utah Valley Hospital. Liability insurance will be provided by the Department and University during your clinical rotation.

This handbook will provide specific information on the policies, curriculum, and expectations of both students and instructors of BYU. We congratulate you on being accepted to the program and we look forward to working with you during the next semesters.

#### Program Officials

Ryan Cordner, Ph.D., MLS (ASCP)<sup>CM</sup>; Program Director  
 Mary Davis, Ph.D., MLS (ASCP)<sup>CM</sup>  
 Eric Wilson, Ph.D., M.S., MLS (ASCP)  
 David Eddington, M.S., MBA, MLS (ASCP); Internship Director  
 Mekeli Sneddon, MLS (ASCP)<sup>CM</sup>; MLS Program Assistant and Internship Coordinator

#### Internship Site Education Coordinators

Ligaya Kuiken	ARUP (Winter)
Brian Huber	Ashley Regional Medical Center
Dale Nielsen	Central Valley Medical Center
Scott Bradley	Eastern Idaho Regional Medical Center (Winter)
Kelly Mahi	Intermountain Health Hospitals
Shawna Dance	Madison Memorial Hospital
Jessie Frank	Mayo Clinic
Darrel Yamane	Mountain View Hospital
Taylor Noyes/Brittany Brown	Renown Healthcare, Reno, Nevada (Winter)
Danon Gibson	St. Mark's Hospital
Janine Sparks	St. Mary's Medical Center, Grand Junction, CO
Megan Goodwin	Timpanogos Regional Hospital
Teena Tafoya	Tricore Reference Laboratories, Albuquerque, NM

#### Mission Statement

The mission of the Medical Laboratory Science program at Brigham Young University is to provide an intensive training experience in the medical laboratory sciences that will be spiritually strengthening, intellectually enlarging, and character building; leading to lifelong learning and service. The program strives to create an environment of inclusivity, hard work, and high expectation that will fully prepare students to practice medical laboratory science or pursue higher levels of education. Graduates of the program will become contributing members of their profession and their communities.

#### Program Goal

The goal of the clinical laboratory science education program is to prepare the student in every way to meet the full professional responsibilities of a medical laboratory scientist.

- Perform analytical tests of body fluids, cells, and other substances

- Confirm abnormal results, executing and verifying quality control procedures , and developing solutions to problems concerning the generation of laboratory data
- Make decisions concerning the results of quality control and quality assurance measures, and institute proper procedures to maintain accuracy and precision

### Essential Functions

\*\*\*The following non-academic standards established by the program are evidenced if the essential functions can be met by the student. Essential functions include requirements that the student be able to engage in educational and training activities in such a way that will not endanger other students or the public, including patients.\*\*\*

#### *Vision*

The student must be able to read charts and graphs, discriminate major colors, and read microscopic materials.

#### *Communication*

The student must be able to communicate effectively and adequately transmit information to all members of the health care team. Must be able to assess non-verbal communication.

#### *Fine Motor Functions*

The student must possess all skills necessary to carry out diagnostic procedures, manipulate instruments and operate equipment. Must be able to lift and move objects. Must be able to perform phlebotomy safely and accurately.

#### *Physical Mobility*

The student must be able to move freely from one location to another in physical settings such as the clinical laboratory, patient rooms, and elevators.

#### *Psychological Stability*

The student must possess the emotional health required for full utilization of the applicant's intellectual abilities. The student must be able to recognize emergency situations and take appropriate actions.

### Program Competencies

At career entry, the medical laboratory scientist will be proficient in performing the full range of clinical laboratory tests in areas such as hematology, clinical chemistry, immunohematology, microbiology, serology/immunology, coagulation, urinalysis, molecular, and other emerging diagnostics, and will play a role in the development and evaluation of test systems and interpretive algorithms. The medical laboratory scientist will have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed or performed. The medical laboratory scientist will also possess basic knowledge, skills, and relevant experiences in:

- A. Communications to enable consultative interactions with members of the healthcare team, external relations, customer service and patient education;
- B. Financial, operations, , and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory services;
- C. Information management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information, and;
- D. Research design/practice sufficient to evaluate published studies as an informed consumer.

### Laboratory Policies

**Individual work** is required unless otherwise directed.

Everyone will be responsible for keeping their own area and the general laboratory clean.

Your working area must be cleared off each day before leaving and wiped off with disinfectant.

Lab coats must be worn at all times in the lab. Long pants and closed-toed shoes are required. Hair must be secured out of the face. Long fingernails or dangling jewelry are discouraged. The same safety techniques as used in clinical

facilities must be followed on campus. No food, drink, or gum is allowed in the lab area. Program iPads must remain in the laboratory.

### Laboratory Attendance

If students miss more than the maximum absences per lab (stated below), their standing in the program will be reviewed by the MLS faculty committee.

(Note: due to the nature of the labs, some labs are unable to be made up for missed points)

MMBio 405, 411, 419 two absences, one must be made up for credit.

MMBio 406, 410, 412 three absences, two must be made up (the first for full credit, the second for half credit)

MMBio 407 four absences. In addition, a maximum of one lab may be missed per unit (generally a unit is one week in length) for a student to receive credit. If two or more absences are missed for a unit, the student may be allowed to make up points for one unit. If two or more absences are missed for more than two units, the students standing in the program will be reviewed by the MLS faculty committee.

### Grading Policies

During the on-campus experience, the student will register for MMBio 405, 406, 407, 409, 410, 411, 412, 418, 419, and 491. All other classes must be completed as listed in the official curriculum for the Medical Laboratory Science Program. **All course work must be completed before the clinical experience (including GE).**

The student must perform with at least a 73% in each integrated classes which are MMBio 405, 406, 407, 409, 410, 411, 412, 418, 419, and 491. If at any time this is not met, the student must reapply to continue in the program and repeat the course.

While enrolled in 405, 406, 407, 409, 410, 411, 412, 418, 419, and 491 the student cannot receive less than 70% on a final exam. If up to two exams per semester are not passed, the student will have an opportunity to take a make-up exam. If the student receives 70% or higher on the exam, they can maintain standing in the program, although it will not change the course grade. If the make-up exam is not passed, the student must reapply to continue in the program and repeat the course.

The grading policy is as follows:

A	93-100%	C+	78-79%
A-	90-92%	C	73-77%
B+	88-89%	C-	70-72%
B	83-87%		
B-	80-82%		

### Professional Development

Since this is the actual beginning of your professional career, you are eligible to participate as a student member of the American Society for Clinical Laboratory Science (ASCLS). For an application, see <http://www.ascls.org>. As a student you may become a member of the American Society for Clinical Pathology. Please visit <http://www.ascp.org>.

### Ethics

Students are expected to maintain a high standard of ethical behavior. The following is the ethics statement from the American Society for Clinical Laboratory Science. It serves as a basis for evaluating ethical behavior:

Being fully cognizant of my responsibilities in practice of Medical Technology, I affirm my willingness to discharge my duties with accuracy, thoughtfulness, and care.

Realizing that the knowledge obtained concerning patients in the course of my work must be treated as confidential, I hold inviolate the confidence placed in me by patient and physicians.

Recognizing that my integrity and that of my profession must be pledged to the absolute reliability of my work, I will conduct myself at all times in a manner appropriate to the dignity of my profession.

Students are expected to comply by federal HIPAA guidelines through all stages of the program.

Any student found with unethical behavior will be immediately dismissed from the program, including cheating and plagiarism.

### Clinical Experience

Interviews for clinical rotation placement will be conducted during your first semester in the program. We will try to be sensitive to your needs, but placement will be determined by the Education Liaison and the Education Coordinators of the clinical affiliates. During your clinical rotation, you will enroll in MMBio 496R.

### *BYU Internship Application*

You may register for 2-12 credits each semester. You must register through the University Internship Office (<https://experience.byu.edu/>) and complete the requirements prior to your clinical experience. This includes immunizations, background clearance and drug testing. Please check with your clinical site; often if you are hired as a student, these requirements will be met upon employment.

### *Clinical Laboratories*

While at the clinical rotation site, you will be under the direct supervision of the education coordinator. They will arrange your schedule and evaluate your performance.

### *Performance*

If at any time during that experience your performance does not meet the minimum level, the affiliate coordinator will contact the BYU internship coordinator. At that time, a meeting will be convened, and those people involved at the clinical site will be consulted. The student will be invited to the meeting to provide any explanations. Any decisions as to the future for the student will be communicated at that time. If, on the other hand, a student encounters any difficulty with the clinical site personnel or procedures, the student should contact the internship coordinator. An attempt will be made to resolve the problem or situation with the person involved and the Education Coordinator. Complaints or grievances requiring further resolution will then be submitted to the MLS internship and program directors followed by evaluation from a neutral party represented by Russell Nielson, College of Life Sciences, BYU. Again, a meeting will be called for those concerned and decisions communicated.

### *Rotation Length*

All students are expected to complete 16 weeks of clinical experience. No more than one sick day per main section will be allowed without being made up. Any additional sick days must be made up by the student after consultation with the education coordinator.

### *Registering for the ASCP exam*

Once all graduation requirements have been met, the student will be eligible for the national certification exam and state licensure, if applicable.

ASCP applications are available online (<https://www.ascp.org/content/home/apply-for-boc-exam>), and it is your responsibility to fill them out. You are also responsible for sending an official transcript with your degree posted before your results can be released.

### *Graduation*

The student will be responsible for completing all steps in preparation for graduation. The following checklist will aid you in this process:

- Apply for graduation during the second semester of your on-campus experience in the program.
- Complete all required course work prior to clinical experience.
- Register for MMBio 496R (2-12 credits) for one semester during your clinical experience.
- Pass MMBio 496R with a 73% or better, with a 70% or greater on the final exam

If any of these requirements are not met, you will not be eligible for graduation or the certification exam.

### **Program Teach-out Plan:**

In the event of program closure, the “teach-out plan” is as follows:

1. If closure is due to exceptional or uncontrollable circumstances such as a natural disaster and the college will reopen the program within 12 months, the students will reenter the program and progress as previously planned.
2. If closure is due to exceptional or uncontrollable circumstances such as a natural disaster and the college will not reopen, every effort will be made to contact MLS programs within the Intermountain area to request that students be transferred into other programs.
3. If closure is due to the college’s decision to no longer offer the program, then all enrolled students will progress as planned. No students will begin the program, only existing students will be enrolled and will be allowed to complete.

## *Central Valley Medical Center*

### *Description of Clinical Facilities*

Central Valley Medical Center (CVMC) located in Nephi, Utah began as a small, rural hospital owned by Juab County in the 1952 with 11 patient rooms, 1 surgical suite and a clinic. It has now expanded to be a 25 bed critical access facility, and offers several different medical specialties such as an emergency department, surgical suites, women's health, orthopedic medicine, labor and delivery, pediatrics, radiology, respiratory therapy and a sleep health clinic. Its hospital is dedicated and committed to treat patients with "compassion, integrity, and respect".

The laboratory at CVMC uses state-of-the-art equipment to perform a remarkable number of tests for a rural hospital laboratory. Some of the instrumentation used in the laboratory includes Roche Chemistry and immunochemistry analyzers, Sysmex hematology analyzer, Sysmex coagulation analyzer, and a BD Phoenix M50 analyzer for automated microbiology identification and susceptibility testing. Molecular testing is performed using the BioFire FilmArray Torch, as well as several Abbott ID NOW analyzers. For blood bank, Ortho's gel card technology is used for antibody screening and cross matching, while the tube system is used for ABO/Rh testing.

#### *Rotation Schedule*

Chemistry	3 weeks
Urinalysis	2 weeks
Hematology	3 weeks
Phlebotomy	1 week
Blood Bank	4 weeks
Microbiology	2 weeks
Research paper/exams	1 week

**\*NOTE:** The rotation won't necessarily be scheduled in that order.\*

The program consists of a 6 - 8.5 hour day (0.5 hour for lunch), Monday through Friday. The starting time varies by department. Students are not required to attend on hospital observed holidays.

CONTACT INFORMATION	JOB TITLE	PHONE	EMAIL
Dale Nielsen	Laboratory Manager	435-623-3155	dnielsen@cvmed.net
Kyle McPherson	Education Coordinator		kmcpherson@cvmed.net

*Employment opportunities available*



**Eastern Idaho Regional Medical Center**  
**Description of Clinical Facilities**  
**WINTER INTERNSHIPS ONLY (UNLESS APPROVED)**

EIRMC is a 350 bed acute care facility located in Idaho Falls, Idaho. The hospital building was completed in December of 1986.

The purpose of the Eastern Idaho Regional Medical Center (EIRMC) Laboratory rotation is to provide training and experience with a large variety of clinical laboratory procedures ranging from manual bench procedures to the operation of highly automated instrumentation.

*Laboratory Information*

Phlebotomy experience will be gained during their 5-week Hematology/UA/Coagulation rotation working as a phlebotomist 5 hours a week in addition to the 8.5 hours in the department. The student will be paid for the 5 hours of phlebotomy work. Training will include venipuncture on adults and children and capillary puncture.

Instrumentation at EIRMC includes: Coulter Hematology Analyzers, IRIs Urinalysis, Sysmex Coagulation instruments, gel and tube methods in blood bank, Biomerieux Virtuo instrument, MALDI (for microbial IDs), and Cepheid GeneXpert PCR instrument.

Additional training at EIRMC will include emphasis on blood cell morphology, isolate and identify microorganisms, serological testing, mycology, parasitology, and virology.

*Rotation Schedule*

Hematology/UA/Coagulation	5 weeks
Blood Bank	3 weeks
Chemistry	4 weeks
Microbiology	4 weeks

The program consists of an 8.5 hour day (0.5 hour for lunch), Monday through Friday. The starting time varies by department. Students are not required to attend on hospital observed holidays.

CONTACT INFORMATION	JOB TITLE	PHONE	EMAIL
Scott Bradley	Laboratory Manager	208-529-6006	david.bradley@hcahealthcare.com

**Employment Opportunities**

Students are paid for phlebotomy training after the first orientation week. There may be additional paid hours available as a phlebotomist or receptionist during the evenings or weekends. Hours are negotiable and are available to those who want to work on an as-needed basis to fill the needs of the department. Graduating students are often hired to fill job openings.

## Intermountain Health

### Description of Clinical Facilities

#### General Information

Intermountain Laboratory Services is proud to have served the communities of Utah and Southern Idaho for over 20 years. As part of the Intermountain Health system, Intermountain Laboratory Services is Utah's leading diagnostic testing resource. The laboratories of Intermountain Laboratory Services hold CLIA and all state required licenses, meet Medicare program requirements and are accredited by the College of American Pathologists (CAP) and the Joint Commission (JC).

There are several Intermountain Hospitals that participate in hosting Clinical Internships for BYU students:

**American Fork Hospital**  
**Intermountain Medical Center (Central Laboratory)**  
**Primary Children's Hospital**  
**Spanish Fork Hospital**  
**Utah Valley Hospital**

Please see the descriptions regarding each hospital on the pages below.

#### Rotation Schedule

Intermountain Laboratory Services institutes a 16 week program, Monday through Friday. Starting time will vary depending on which department you are in. Students are required to stay for a minimum of 6 – 8.5 hours, and not required to attend on certain hospital holidays.

Chemistry	3 weeks	
Hematology	2 weeks	
Urinalysis/Body Fluids	1 week	
Coagulation	1 week	
Blood Bank	3 weeks	
Microbiology/Molecular Biology	2 weeks	
Phlebotomy/Specimen Processing	1 week	
BYU Final Exam week	1 week	
<b>BYU MICROBIOLOGY SIMULATION</b>	<b>2 weeks</b>	<b>**To be completed at BYU**</b>

\* The rotation won't necessarily be scheduled in this order.\*

**Note:** IH hospitals will send you to different locations throughout their hospital system to complete your training. This includes sending you to hospitals that aren't on the above list such as LDS Hospital, Riverton Hospital and Alta View Hospital. **YOU WILL RARELY COMPLETE ALL OF YOUR TRAINING AT THE SAME SITE.** Reliable transportation is a requirement.

#### Employment Opportunities

Limited, part-time work (evenings or weekends) **may** be available upon successful completion of a rotation through the applicable section. NOTE: Shifts and hours are often variable and not guaranteed. Additionally, paid shifts cannot conflict with internship hours nor can they exceed 20 hours per pay period.

Contact Information	Job Title	Phone	Email
Kelly Mahi	Education Coordinator	801-507-2136	kelly.mahi@imail.org

## American Fork Hospital

### **General Information**

American Fork Hospital was first established in 1937 as a small 25 bed hospital. In 1978, it joined Intermountain Healthcare and since then have grown to a 205,000 square foot hospital with 117 beds and modern operating rooms boasting state of the art technology. The laboratory performs over 100,000 tests per year and has a lab staff of 25 employees.

American Fork welcomes more than 3,000 babies annually and has an advanced level II nursery and a Pediatric Unit. Our Emergency Department offers emergency care 24 hours a day, seven days a week, and is a Trauma IV Center. The American Fork Cancer Center combines Intermountain's expertise with the Huntsman Cancer Institute's research capabilities providing complete diagnosis, treatment, and research services including chemotherapy, radiation therapy, clinical trials, and full surgical options. During recent years they have been recognized three times as one of America's top 100 hospitals.

### **Additional Rotation Expectations**

Student hours will generally be 7:00 a.m. - 3:30 p.m. but may vary depending on which department the student is in. The student is expected to do one research paper during the rotation. You may choose a disease, one aspect of a disease, or turn it into a case study on a patient. This will be presented during a meeting of the technical staff and will be saved for future students to review.

## Primary Children's Hospital

### **General Information**

Primary Children's Hospital is the Intermountain West's only full-service children's hospital. PCH is a 289-bed facility and cares for children with acute and chronic medical needs from 6 Intermountain states and beyond. PCH has a medical provider staff of more than 750 and provides operating facilities and equipment for procedures ranging from heart and bone marrow transplantation to level 1 trauma services. Founded in 1852, they were most recently named as one of the "Best Children's Hospitals" by the U.S. News & World Report 2016-2017.

## Utah Valley Hospital

### **General Information**

Utah Valley Hospital is found in the heart of Utah Valley in Provo, Utah. Because of its prime location and excellent facilities, UVH provides laboratory services for many smaller hospitals and clinics in rural Utah. The laboratory offers a wide selection of laboratory tests and performs over 400,000 tests a year. Founded in 1939, UVH is one of the largest hospitals in Utah with 408 beds and is a Level II Trauma Center. Their most recent achievement was their 2013 Get with the Guidelines Stroke Gold Plus award for their efficiency and quality of care. The Medical Center and laboratory have some of the newest and most state-of-the-art equipment available including a new Electrophysiology Lab specializing in faster and safer treatments for heart rhythm patients

## IMC Central Region Hospitals

Students who choose Intermountain Central Region Hospitals will have the opportunity to rotate through one or many of the four sites below (Central Lab, Alta View, LDS, and Riverton). This will give you the opportunity to compare the differences between larger, specialized labs to smaller, more generalist labs. We encourage students to use this opportunity to see what you love and don't love about the laboratory, as the internship is not only a way for our supervisors to get to know you, with hopes of hiring you, but for you to really discover what area of the lab you love. All Microbiology rotations are held at Central Lab or Primary Children's.

**Intermountain Medical Center (IMED)** is built on a 100-acre campus that is centrally located at the center of the Salt Lake Valley in Murray, UT. Built in 2007, it is the largest hospital in the intermountain west, and serves as a major trauma and referral center for six states and more than 75 regional healthcare institutions. IMED treats the largest percentage of the regions' cancer and open-heart surgery patients and provides many other specialized services. It was recently named as one of the "100 Great Hospitals in America" in 2016 by *Becker's Hospital Review*.



The **Central Laboratory** is located on the south end of the IMED campus and is home to more than 450 employees. The Central Laboratory services 23 hospitals, 185 physician clinics, and independent physician offices. The two-story facility houses all laboratory specialty services such as Flow Cytometry and Molecular Pathology. This laboratory tests 550,000 patients and generates 18 million test results annually. The lab is broken up into many different departments including a separate transfusion medicine department located in the main facility. The FrontRunner also serves the IMED campus, which makes getting to Central Lab, even from Provo, quick and easy.

**Alta View Hospital** is located at the base of the Cottonwood Canyons in Sandy. Alta View offers the convenience and family atmosphere of a small, community hospital and also the experience and skill of one of the nation's most respected hospital systems. The recent recipient of the Community Partnership Award and Truven 100 Top Hospitals, Alta View Hospital provides high-quality, advanced care for almost any medical need. This campus is undergoing a three-year renovation and reconstruction project to update several buildings and add two, four story towers. The laboratory has a tight-knit staff of 25 and performs over 100,000 tests per year.

**LDS Hospital** Beginning in 1905, LDS hospital has slowly grown and expanded to the 220 bed hospital it is today. The complex provides operating facilities and equipment for transplant surgery and is also a bone marrow transplant center. It is a level I trauma center. In 2013 US News ranked LDS Hospital number one in Utah along with national recognition for their women's services. The LDS lab consists of chemistry, hematology, and transfusion medicine departments which process over 200,000 samples per year.

**Riverton Hospital** is located in the south end of the Salt Lake Valley and provides service to this area. The hospital has over 500 employees is home to The Children's Unit. Riverton hospital was named one of the nation's top 100 hospitals by Truven Health Analytics. Riverton's lab consists of chemistry, hematology, and transfusion medicine departments which process over 100,000 samples per year.

## Madison Memorial Hospital

### Description of Clinical Facilities

#### General Information

Madison Memorial Hospital is a 69 bed acute care non-profit hospital located in Rexburg, Idaho. Madison Memorial Hospital has been serving the residents of Madison County and the surrounding area for 60+ years. Our hospital provides comprehensive service supported by an active medical staff.

The purpose of the Madison Memorial Hospital clinical rotation is to assist the Medical Laboratory Science student in completing his/her education while providing professional exposure to a hospital environment. It is our intention to provide the student with a variety of clinical laboratory procedures ranging from manual bench procedures to testing performed on highly automated equipment. Our goal is to guide the student to an understanding of the procedures and results so that he/she will understand the clinical application of the tests and appreciate the significant role that the laboratory professional plays in providing quality health care.

#### Rotation Schedule

This clinical rotation is comprised of 16 weeks. The program consists of an 8 ½ day (1/2 hour for lunch), Monday through Friday. The starting time will vary depending upon the department you are in. Occasionally you will be required to work a graveyard or evening shift as some testing may only be performed on those shifts. Students are not required to attend on holidays observed by the hospital.

All students are required to complete an abbreviated hospital orientation prior to beginning in the department. This orientation may be coordinated through the administrative director or the department student coordinator. Students will rotate through the areas on the schedule listed below.

Phlebotomy/Receptionist	1 week
Hematology/ Urinalysis	4 weeks
Coagulation	1 week
Chemistry	3 weeks
Blood Bank	4 weeks
Microbiology/Serology	3 weeks

Contact Information	Job Title	Phone	Email
Shawna Dance	Laboratory Manager		<a href="mailto:shawna.dance@madisonhealth.org">shawna.dance@madisonhealth.org</a>

## Mountain View Hospital

### Description of Clinical Facilities

**Mountain View Hospital** has supported the medical needs of residents of South Utah County for over 25 years. Mountain View Hospital is a 136 bed hospital located in Payson. Our facility provides comprehensive services supported by a network of primary care and specialty physicians. Our hospital provides the latest medical advances, including an Orthopedic Specialty Center.

The purpose of the Mountain View Hospital Laboratory rotation is to assist the Clinical Laboratory Science student in completing their education while receiving professional exposure to a hospital atmosphere. It is our intention to provide training and experience with a large variety of clinical laboratory procedures. These procedures will range from a few manual bench procedures to the operation of highly automated instrumentation. Our goal is to guide the student to an understanding of procedures and results so that he or she will correctly understand the clinical application of each test and more fully appreciate the significant role of a laboratory professional in providing health care. Emphasis will be placed on a high work ethic and being completely honest in job performance.

#### **Rotation Schedule**

The program consists of an 8½ hour day (½ hour for lunch); Monday through Friday. The starting time varies with the Department but is usually between 6:00 – 7:00 am. Students are not required to attend on holidays observed by the hospital.

Microbiology	4 weeks *to be completed at <b>ARUP*</b>
Chemistry	4 weeks
Hematology/Urinalysis/Coagulation	4 weeks
Blood Bank	4 weeks

Students should complete the Hospital Orientation and computer training one to two weeks prior to the start of the internship program. Details are available through the Human Resources Department or the Laboratory Education Coordinator.

#### **Employment Opportunities**

Students are paid for working extra hours in a department after they have completed training and are competent in that area. These hours would be to fill a need in the department. There may be additional paid hours available as a front office receptionist/phlebotomist during the afternoons or on Saturdays. Hours are negotiable and are available to those who want to work on an as-needed basis to fill the needs of the department. Graduating students are often hired to fill job openings.

Contact Information	Job Title	Phone	Email
Darrel Yamane	Laboratory Manager	801-465-7467	darrel.yamane@mountainstarhealth.com
Sariah Kading	Education Coordinator		sariah.kading@mountainstarhealth.com

## Timpanogos Regional Hospital

### Description of Clinical Facilities

The purpose of the Timpanogos Regional Hospital Laboratory clinical rotation is to assist the Medical Laboratory Science student in completing their education while receiving professional exposure to a hospital atmosphere. It is our intention to provide training and experience with a large variety of clinical laboratory procedures. These procedures will range from a few manual bench procedures to the operation of highly automated instrumentation. Our goal is to guide the student to an understanding of procedures and results so that he or she will correctly evaluate the clinical application of each test and more fully appreciate the significant role of a laboratory professional in providing health care. Emphasis will be placed on a high work ethic and being completely honest in job performance.

Timpanogos Regional Hospital is part of the Hospital Corporation of America (HCA) Healthcare system. Timpanogos Regional Hospital has been in its present location since January 1998. We take great pride in being an aggressive health care provider. We currently have almost 400 local physicians credentialed to practice at our hospital covering a broad spectrum of the specialties. The medical laboratory science student will receive a broad exposure to the many aspects of delivering our health care product.

#### **Rotation Schedule**

This laboratory has a 16 week program, Monday through Friday. The starting time varies with the Department. Students are not required to attend on certain hospital holidays.

Urinalysis/Serology	2 weeks
Quality Assurance/Processing/Phlebotomy	2 weeks
Hematology/Coagulation	3 weeks
Microbiology	3 weeks
Blood Bank	3 weeks
Chemistry	3 weeks

Employment opportunities available.

Contact Information	Job Title	Phone	Email
Megan Goodwin	Laboratory Manager	801-714-6050	megan.goodwin@mountainstarhealth.com

## St. Mark's Hospital

### Description of Clinical Facilities

St. Mark's hospital was founded in 1872 as a small six bed hospital by Bishop Daniel S. Tuttle. Now, over 140 years later, St. Mark's has grown to become a 317 bed facility that continues to fulfill its "Not Bigger. Just Better." promise. St. Mark's was ranked in the 100 best hospitals for coronary intervention by Healthgrades in 2017, and was listed among the top 50 cardiovascular hospitals nationwide by Truven Analytics in 2015.

#### **Rotation Schedule**

This laboratory has a 16 week program, Monday through Friday. The starting time varies with the Department. Students are not required to attend on certain hospital holidays.

Blood Bank	4 weeks
Microbiology	4 weeks
Hematology	3 weeks
Coagulation	2 weeks
Urinalysis	2 weeks
Chemistry	1 week

Contact Information	Job Title	Email
Danon Gibson	Laboratory Manager	danon.gibson@mountainstarhealth.com



## Mayo Clinic

### Description of Clinical Facilities



Mayo Clinic in Scottsdale, AZ is a 268-bed teaching hospital with 13,437 admissions per year. It performs 5,794 inpatient and 7,735 outpatient surgeries per year. Its emergency room had 30,444 visits. Mayo Clinic, AZ was ranked as the 20<sup>th</sup> best hospital in the nation by U.S. News in 2017. It was also ranked as the #1 hospital in Arizona. Students doing their internship at Mayo Clinic will have a unique laboratory experience at a hospital that is known throughout the world for its excellence in health care. Locations of internships are in 2 different locations, one in Scottsdale, and another in Phoenix, AZ.

#### **Locations**

Mayo Clinic  
13400 E Shea Blvd.  
Scottsdale, AZ 85259

Mayo Clinic  
5777 E. Mayo Blvd  
Phoenix, AZ 85054

#### **Rotation Schedule**

This laboratory has a 16 week program, Monday through Friday. The starting time varies with the Department. Students are not required to attend on certain hospital holidays.

Phlebotomy	1 week
Chemistry	4 weeks
Hematology/Coagulation	3 weeks
Blood Bank	4 weeks
Microbiology	4 weeks

Contact Information	Job Title	Phone	Email
Jessie Frank	Education Specialist	480-342-4261	frank.jessica1@mayo.edu

## St. Mary's Medical Center

### Description of Clinical Facilities

St. Mary's Medical Center is a regional hospital in Grand Junction, Colorado, in Mesa County. The hospital has 310 beds, making it the largest hospital between Denver and Salt Lake City. The hospital has a Level II trauma center.

#### Rotation Schedule

This laboratory has a 16 week program, Monday through Friday. The starting time varies with the Department. Students are not required to attend on certain hospital holidays.

Phlebotomy	1 week
Chemistry	4 weeks
Hematology/Coagulation	3 weeks
Blood Bank	4 weeks
Microbiology	4 weeks

Contact Information	Job Title	Phone	Email
Janine Sparks	Laboratory Manager	970-298-1931	janine.sparks@imail.org

## ARUP Reference Laboratory Description of Clinical Facilities

### WINTER ROTATIONS ONLY

ARUP Laboratories is a national nonprofit and academic reference laboratory at the forefront of diagnostic medicine. They are CAP-, ISO 15189-, and CLIA-certified diagnostic lab with more than 35 years of experience supporting clients through unparalleled quality and service. Our forward-thinking community of academic experts and consultants is here to empower our clients with the most current industry knowledge and unparalleled guidance.

#### Rotation Schedule

This laboratory has a 16 week program, Monday through Friday. The starting time varies with the Department. Students are not required to attend on certain hospital holidays.

Contact Info	Job Description	Phone	Email
Ligaya Kuiken	Education Program Coordinator	801-583-2787 x3615	ligaya.kuiken@aruplab.com

## TriCore Reference Labs

### Description of Clinical Facilities

Located in Albuquerque, New Mexico, TriCore has emerged as New Mexico's leader in clinical laboratory services under the direction of more than 30 pathologists and scientific directors. Through our unparalleled testing expertise, it finds the right signs to shine a light on progress and guide those who heal their communities in the right direction

#### Rotation Schedule

This laboratory has a 16 week program, Monday through Friday. The starting time varies with the Department. Students are not required to attend on certain hospital holidays.

Urinalysis	1 week
Chemistry/Immunology	3 weeks
Hematology/Coagulation	4 weeks
Blood Bank	4 weeks
Microbiology	3 weeks
Virology	1 week

Contact Information	Job Title	Phone	Email
Teena Tafoya	Clinical Laboratory Education Specialist	505-938-8231	Teena.tafoya@tricore.org

## Renown Health

### Description of Clinical Facilities

Located in Reno, Nevada. As a national health leader, Renown challenges themselves to go above and beyond for the health of our entire community. They develop programs to help people live healthier, happier lives and provide the region's only Level II Trauma Center, serving over 1 million people and 100,000 square miles. They offer desperately needed health and medical services in remote, rural communities.

#### Rotation Schedule

This laboratory has a 16 week program, Monday through Friday. The starting time varies with the Department. Students are not required to attend on certain hospital holidays.

Urinalysis	1 week
Chemistry	4 weeks
Hematology	2 weeks
Blood Bank	4 weeks
Microbiology	4 weeks
Coagulation	1 week

Contact Information	Job Title	Phone	Email
Taylor Noyes	Laboratory Manager	775-982-5509	<a href="mailto:taylor.noyes@renown.org">taylor.noyes@renown.org</a>
Brittany Brown	Student Coordinator		<a href="mailto:brittany.brown@renown.org">brittany.brown@renown.org</a>

## Ashley Regional Medical Center

### Description of Clinical Facilities

Ashley Regional Medical Center has been a part of the Uintah Basin since 1941. Ashley Regional is a Joint Commission Accredited 39-bed hospital located in the heart of Dinosaur Land in Vernal, Utah.

The Emergency Room at Ashley Regional treats over 14,000 patients a year and is staffed 24-hours a day with a dedicated emergency room physician. Ashley Regional is a designated Level IV Trauma Center, has been designated as a Stroke Receiving Facility by the Utah State Department of Health, is Chest Pain Accredited, and holds a 5-star CMS rating.

Beyond emergency services, Ashley Regional offers a full range of inpatient and outpatient specialized services, including orthopedics, obstetrics, level II neonatal intensive care unit, IV therapy and chemotherapy, general surgery, respiratory therapy, sleep lab, cardiac rehabilitation, diabetes care, family medicine, ENT, neurology, medical laboratory, diagnostic and interventional radiology and more.

In 2022 Ashley Regional has been recognized as a Top 100 Rural & Community Hospital by The Chartis Center for Rural Health for the sixth consecutive year as well as placed on the 2021 Watson Health 100 Top Hospitals list. The healthcare workers at Ashley Regional Medical Center are committed to providing the best possible patient care.

#### Laboratory Services

Hematology: Includes Coagulation, Semen Analysis, Serology, Body Fluids & Urinalysis.

Chemistry: Includes Immunoassays and Special Chemistry.

Microbiology: Includes Bacteriology, Molecular & Rapid Testing.

Blood Bank: Includes ABO/RH, Antibody Screens, Cross-matching & Cord blood workups.

#### Rotation Schedule

This laboratory has a 16 week program, Monday through Friday. The starting time varies with the Department. Students are not required to attend on certain hospital holidays.

Chemistry	4 weeks
Hematology	4 weeks
Blood Bank	4 weeks
Microbiology	4 weeks

Contact Information	Job Title	Phone	Email
Brian Huber	Laboratory Manager	435-781-6872	brian.huber@lpnt.net

## Resource links

BYU Admissions Policy

<https://policy.byu.edu/view/admission-policy>

BYU Academic Honesty Policy

<https://policy.byu.edu/view/academic-honesty-policy>

BYU Academic Standards Procedures

<https://policy.byu.edu/view/academic-standards-procedures>

BYU Academic Grievance Policy

<https://policy.byu.edu/view/student-academic-grievance-policy>

BYU Undergraduate Graduation Evaluation Policy

<https://policy.byu.edu/view/undergraduate-graduation-evaluation-policy>

Medical Laboratory Sciences Major Map

<http://catalog2022.byu.edu/openPDF/maps/22/285220.pdf>

## Medical Laboratory Science Affective Objectives

Upon completion of the program, the student should be able to:

1. Commit to do their best and make a good impression.
2. Conform to the HIPAA guidelines regarding patient information.
3. Observe all clinical facility policies and procedures, as outlined in appropriate SOPs.
4. Obey all laboratory safety procedures, including no eating/drinking in the lab and no personal items (cell phones, mp3 players, etc.) in the contaminated areas.
5. Communicate responsibly with laboratory personnel and others on the healthcare team.
6. Serve as a team member and respect the opinions of others.
7. Accept constructive criticism and apply it in a positive way.
8. Strive for increased efficiency and quality through organization.
9. Seek unsolicited tasks (unknowns, case studies, computer tutorials, practice calculations, study questions, relevant current articles, QC review and SOP review).
10. Commit to clinical rotation by asking questions, being self-motivated, seeking out challenges and being helpful to teaching techs.
11. Notify teaching tech when leaving area for breaks or lunch.
12. Consult with teaching tech when a procedure does not work out the first time.
13. Maintain adaptability in action and attitude.
14. Give advance notice when late or absent.

Demonstrate honesty.

I have read the student handbook and agree to abide by the policies and information included.

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

I give my permission that grades and other evaluation materials may be released to prospective internship site education coordinators.

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date



## Memorandum of Understanding

In order to accept all the students into the MLS program, it is necessary that we utilize all of our clinical affiliation sites, some of which are not within driving distance of Brigham Young University. Some of these sites include: Eastern Idaho Regional Medical Center in Idaho Falls, Idaho; Madison Memorial Hospital in Rexburg, Idaho; Central Valley Medical Center in Nephi, Utah, Tricore Reference Laboratories in Albuquerque, New Mexico; Renown Healthcare in Reno, Nevada; St. George Regional Hospital in St. George, Utah, the Mayo Clinic in Phoenix, Arizona; and St. Mary's Hospital in Grand Junction, Colorado. **We try to honor each student's first or second request for clinical facility placement. However, it may be necessary to place students in one of these facilities if they are not selected as a first or second choice. It is expected that you will honor those placements.**

Also, each student is required to complete all course requirements for graduation before the internship begins. No other course work is to be performed during the hospital internship including independent study courses. Your internship may be delayed.

Your acceptance into the MLS Program is based on the above premise. If you agree to that arrangement, please sign and date below. Your signature indicates that you are aware that you may be assigned to a clinical affiliate that may not be your choice and that all of your course requirements for graduation are completed prior to the internship.

Please sign and print your name:

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Printed Name

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Student Signature

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Date