# BUILDING THE BASE:

## *HOW WE BUILT A HIGH SCHOOL MEDICAL LAB PROGRAM SUPPORTING HANDOUT*

## KNOWLEDGE AND SKILLS WE TEACH

### THEORETICAL KNOWLEDGE

**Core Knowledge:**

- 1,000 Prefixes, Roots Suffixes of Med Terms
- Laboratory Safety
- Solution/Dilution Math
- Phlebotomy Theory
- Anatomy & Physiology

**Collegiate Level Content:**

- Hematology
- Immunology
- Microbiology
- Histology/Cytology
- Urinalysis
- Clinical Chemistry
- Genetics

Our Program

### LABORATORY SKILLS

**Core Lab Skills:**

- Microscopy
- Micropipetting
- Titration
- Spectrophotometry
- Venipuncture and Dermal Puncture
- Organic Chemistry Through Making Soap

**Collegiate Level Lab Skills:**

- Blood Smears
- ELISA
- Bacterial Identification
- Plates, Stains & Biochemical Tests
- Chemical & Microscopic Analysis of Urine
- POCT Clinical Chemistry Test
- Microtome Use
- H&E Staining
- Bioinformatics
- Molecular Cloning
- PCR
- Bacterial Transformation
- Now we are even adding Glovebox Incubator

## MEDICAL LAB PROGRAM KEYS TO SUCCESS

- Early WBL
- Challenging engaging curriculum
- Laboratory visits & guest speakers
- Adding transferable skills for career exploration
- Enough equipment so sharing is minimized
- Ensure that the program meets state CTE standards
- Promote the Program!!
  - LinkedIn is your friend
  - Media Public Relations

### AFFORDING EQUIPMENT

- Acquire funding through grants
  - Perkins Grant
  - Laboratory Grants
- Donations of lab equipment

Your Educational Partner of Choice BOCES 2

***Connect with Jim Payne via email at jim.payneIV@gmail.com or via LinkedIn using this QR code:***

# REQUIREMENTS FOR A PROGRAM

## NYS MEDICAL LABORATORY PROGRAM REQUIREMENTS

- **Complete NYS Guide:**
- Suggested Certification Blueprint Organizations:
  - American Medical Technologies (AMT), National Healthcareer Association (NHA), National Center for Competency Testing (NCCT)
- Health Science Core Curriculum (https://healthscienceconsortium.org/standard)
- Supervised Clinical Experience (CO-OP)
- Affiliation agreement(s) must be established (a written contract with partnering healthcare facilities)
- Must have 108 hours of clinical experience

# CERTIFICATION REQUIREMENTS

## PHLEBOTOMY CERTIFICATION

- Check blueprint
- Determine number of successful venipunctures
- Determine required number of clinical hours
- Review certification exam

## MED LAB ASSISTING CERTIFICATION

- Check blueprint
- Determine required number of clinical hours
- Review certification exam

# MEDICAL LABORATORY COLLEGE OPPORTUNITIES

## ARTICULATION AGREEMENTS

- Priority application status
- Waive application fees
- Waive classes or offer
- Dual Credit
- Offer scholarships

Medical Laboratory Assisting & Phlebotomy

## NYS TRANSITIONAL-A CTE TEACHER CERTIFICATION

**Transitional A Certificate Requirements:**

- Individuals must have a commitment from a New York State school, school district, or BOCES to employ and mentor them while they complete the Initial certificate requirements
- MLT or MLS Work Experience Required
- **More Information Can Be Found:**

# WORK-BASED LEARNING

## STUDENT SHADOWING

- Provides students with a way to specialize in an area of interest
- Things to think about:
  - 1-8 Hours in length
  - Background checks on staff?
  - Organizational rules/regulations around high school students and lab
  - Scheduling
- Plan what the student will get out of it

## UNPAID CO-OPS

- Great for training CO-OPs like are required for certification & NYS
- Things to think about:
  - 40-80 hours in length
  - Same as shadowing
  - Plan a set of competencies to meet certification requirements
  - Ensure staff are prepped to teach and constantly engage

## PAID CO-OPS

- Students can provide the same role as an employee
- Labs don't need to follow NYS requirements for employment in relation to hazardous roles
- Things to think about:
  - <500 hours in length
  - Same as unpaid CO-OPs

**"WE ARE CREATING THE CLINICAL AND PUBLIC HEALTH WORKFORCE OF THE FUTURE!" - CHIEF OF CDC'S EPIDEMIC INTELLIGENCE BRANCH DR. ERIC PEVZNER**

UR MEDICINE LABS CLINICAL OBSERVATIONS
INFORMATION, INSTRUCTIONS AND DESIGNATION OF KEY ROLES
HIGH SCHOOL STUDENT-CLINICAL LAB ASSISTANT PROGRAMS

PRIMARY CONTACT FOR STUDENT ISSUES OR CONCERNS

- PRIMARY INSTITUTION CONTACT: cell phone preferred XXX.XXX.XXXX

SCHEDULE AND LOGISTICS

- Student Touch Down Spaces when not in clinical areas: Shell A, Crickler Vending in A200 Café, or Vivarium Room E142. If they decide to take lunch in the E142 conference room, there is a microwave and refrigerator available for their use.
- Primary Contact will do an orientation with students on Monday from 8:30a-11:45 and show them to the café so they can have lunch from 11:45a-12:45p. They will then escort them to their training areas.
- Students will have visitor badges- and hopefully Name Tags. They should also display their School ID's. BECAUSE WE ARE UNABLE TO PROVIDE URMC ID BADGES, STUDENTS WILL NEED TO BE ESCORTED THROUGHOUT THE BR FACILITY. THE BEST WAY TO ACCOMPLISH THIS IS TO HAVE EACH AREA TAKE RESPOSIBILITY FOR ESCORTING THE STUDENTS TO THEIR NEXT ASSIGNMENT. AT THE END OF THE DAY PLEASE ESCORT THEM TO THE MAIN LOBBY (NOT THE SIDE ENTRANCE).
- Students will be moving around a lot. It is best if they keep their personal belongings in a supervisor's office of their daily training areas. If this becomes an issue inform the primary contact.
- Students will need to be provided with disposable lab coats (extra supplies are found in the education training areas)

BACKGROUND CHECKS

- Our HR Rep will send emails to the employees identified as contacts- each employee will need to follow his instructions to get the background check process started
- Please help staff get the Minor Training program in MyPath completed. Keep a record of completion.

STUDENT TRAINING RECORDS

- Time sheets and Learning Objective/Training Checklists should be completed and turned in to the primary contact at the end of the training week. Each student will be provided with a folder to keep materials in throughout the week. They should turn these in to the last person who has trained them on Friday afternoon.

EXPECTATIONS AND ROLES

- Institution Primary Contact
    - Handles any student or trainer concerns; escalates to the cooperating teacher or supervisors appropriately
    - Organizer and Coordinator
    - Liaison to High School Teachers/Program Directors/Administration
    - Record storage
- Laboratory Managers of Training Areas
    - Work together to continuously streamline the experience
    - Work together to schedule opportunities as best as possible to the convenience of the labs
    - Provide feedback to primary contact on readiness of students for employment: i.e. professional behaviors, willingness to learn, ability to function in a fast-paced environment, etc.
    - Look to bridge to employment opportunities for graduates
- Lab Supervisors
    - Contact for employee concerns or issues
    - Escalates student issues to primary contact
    - Assists in coordinating and scheduling clinical experiences
    - Forwards completed training records to primary contact
    - Meets with students for a few minutes to discuss career opportunities.
- Trainers
    - Explains, demonstrates and assesses student engagement of each assignment.
    - Completes training records and submits to supervisors
    - Maintains ICARE and professional behaviors
    - Encourages students to consider careers in the lab
    - Escalates student issues to supervisors, if urgent calls primary contact cell phone

**UR MEDICINE LABS**
**CLINICAL LABORATORY ASSISTANTS**
**LAB SUPPORT TECHS I, II, III, IV**
**ASSIGNMENTS & SUMMARY OF JOB DUTIES**

SPECIMEN MANAGEMENT AND RECEIVING (SMS)

I. Window: Primary receives samples from couriers, triages by urgency level, stability and specimen type, sorts by laboratory and lab location.

II. Accessioning (order entry): registers patient demographic & billing information to the Health Information System and Lab Information Matches specimen test orders to the patient account in the Lab Information System. Confirms that the patient name and lab label match from the specimen match the order in the health information system by checking 2 forms of identification. Checks that the collection information is current and that the patient's demographic and billing information are correct in the system. Accuracy for every test run on each sample from this point forward depends on the employee's ability to pay attention to these details.

III. Aliquot: Centrifuges and pipets aliquots of samples into the testing tubes used on the analyzers. Address clotted samples, short volumes and specialized handling procedures (short sample volume; clotted samples; etc.) as needed. This station also does Preanalytic processing for urine samples.

IV. Automation: Loads samples on the ROCHE 8100; ensures that the operation of the ROCHE 8100 is smooth. Troubleshoots the instrument when problems arise. Adds consumables as needed, runs maintenance, etc. Ensures that samples are labeled properly for smooth automation. Unloads samples by stability to offline testing areas or for storage. Investigates and remediates any errors.

V. Exception Handling (EHT): follows up on "problems"; i.e. when samples, labels and or test orders have discrepant information. They contact the provider; resolve the issue in the systems; and document their correspondences. If required coordinates recollection with patients.

VI. Reference Lab: coordinates test orders that are sent to external reference labs following each reference laboratory's protocol for specimen requirements and sets up courier services as required. Also handles billing from external labs.

VII. Microbiology Specimen Receiving: accessioning and order entry of samples for bacterial, viral, fungal, parasite, mycobacterial and all other microbiology cultures and tests. Also handles serology samples. In addition, loads bacterial blood cultures onto the system.

CLIENT SERVICES-CSV

I. Addons: receives orders electronically, on paper, or verbally for test orders that are added to samples that have already been sent to the lab. Investigates whether or not the appropriate collection tubes of blood and if so, that they still meet the collection criteria (age of specimen is appropriate for testing) are on hand for the addon test order that is requested. If appropriate,

the client service representative adds the requested test to the Lab Information System and notifies the specimen management team that the tubes need to be pulled and sent to the correct lab for testing. On the other hand if the blood on hand does not meet the collection criteria for the requested test, this representative notifies the ordering physician verbally and/or electronically that new specimens must be collected.

II. Call/Fax: Provides final test results to ordering providers based on their specific notification guidelines. They may be called and submitted verbally or faxed.

III. Answer Phones: These customer service representatives receive/answer phone calls from providers, patients, phlebotomists and all other laboratory personnel. These callers are usually requesting test results, clarification of test results, clarification of proper collection criteria, PSC hours, complaints, etc.