



Department of Medical Laboratory Sciences and Biotechnology

Jefferson College of Health Professions

Presentation Overview

- Department Overview
- Program Spotlight
- Degree and Track Options
- Sample Student Work
- Outcomes and Careers
- Professional Associations
- Student Profile
- Faculty Profile
- Alumni Profile



Dr. Barbara Goldsmith

DEPARTMENT OF MEDICAL LABORATORY SCIENCES AND BIOTECHNOLOGY, CHAIR AND PROFESSOR

THOMAS JEFFERSON UNIVERSITY HOSPITAL, DIRECTOR, CLINICAL LABORATORIES, POINT OF CARE, AND QUALITY

DEPARTMENT OF PATHOLOGY, ANATOMY, AND CELL BIOLOGY, CLINICAL PROFESSOR

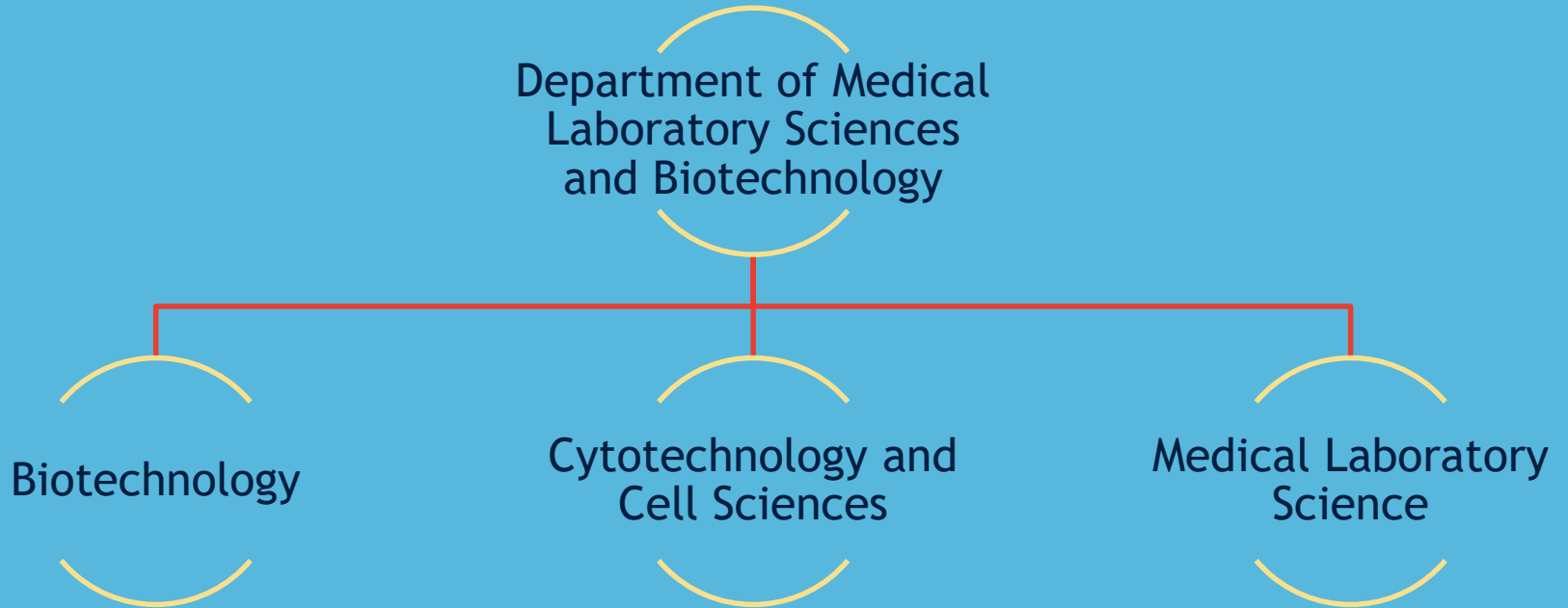


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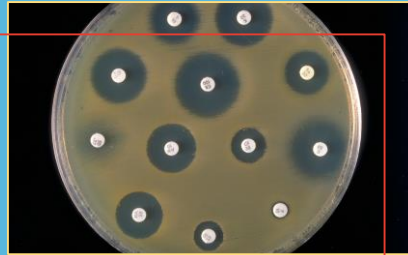
One Department Three Programs



Biotechnology

Biotechnologists develop products and solve problems that address critical needs

Biotechnologists are adaptable to many fields, utilizing their training in cutting edge technologies



Medicine



Bioprocessing

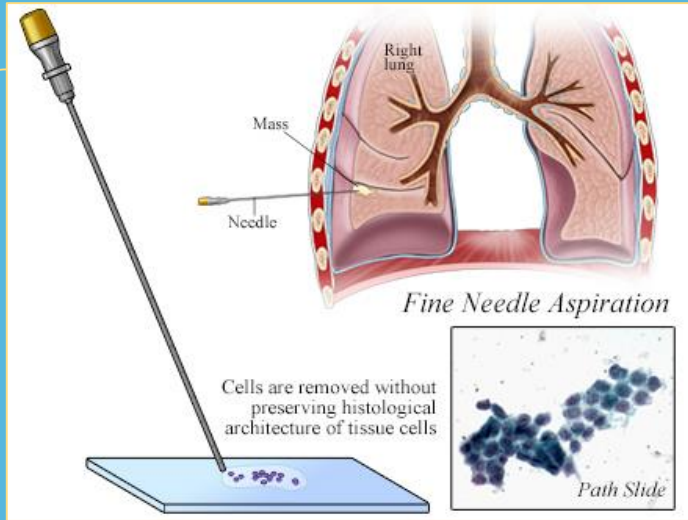


Forensics



Agriculture

Cytotechnology



Cytotechnologists collaborate with pathologists to evaluate cellular specimens from all organs for the presence and diagnosis of disease

The Cytotechnology and Cell Sciences program at Jefferson has a comprehensive curriculum to educate and train students to

Diagnose cancers, other diseases, and infections

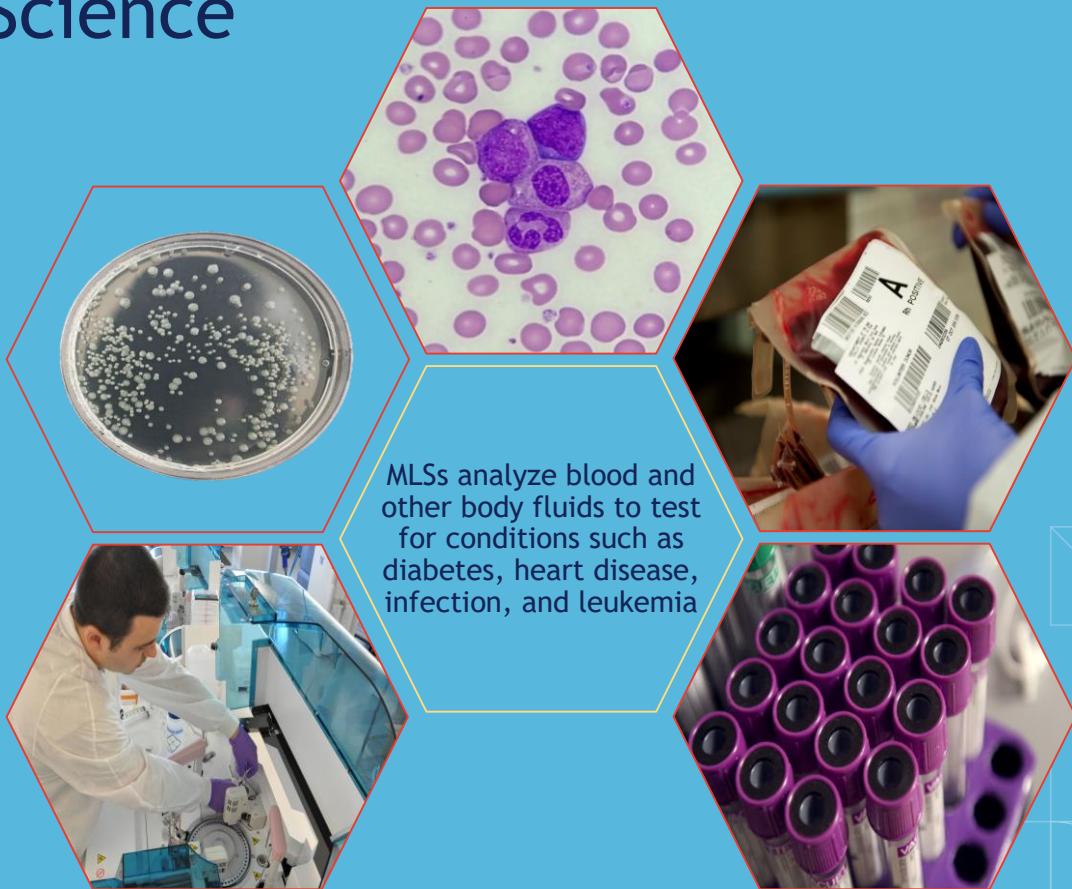
Screen patients for pre-cancerous conditions or signs of recurrent disease

Guide target-specific therapy

Participate in rapid on-site evaluation of a specimen during surgical interventions

Medical Laboratory Science

Medical laboratory scientists (MLSs) work behind the scenes to provide clinicians with the laboratory results needed to diagnose, treat, and manage their patients



MLSs analyze blood and other body fluids to test for conditions such as diabetes, heart disease, infection, and leukemia

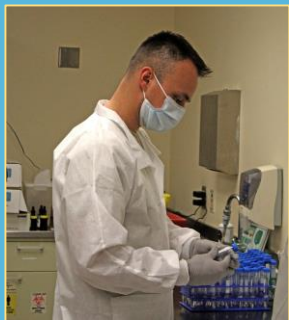
Medical Laboratory Science

The MLS's Role in the COVID-19 Pandemic Response: We Save Lives



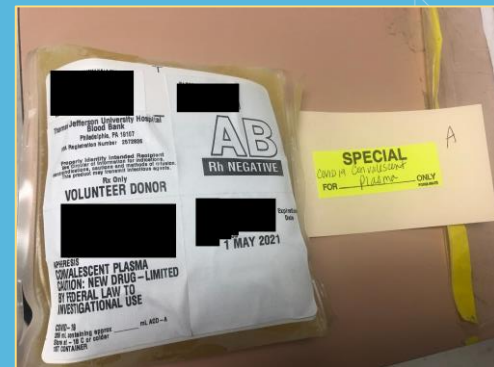
Specimen Collection and Transport

Specimen Processing



Specimen Testing

COVID-19 Treatment



DEGREE AND TRACK OPTIONS

Undergraduate

- BS, One-Year Option
- BS, Two-Year Option

Undergraduate and Graduate

- 3+2 Health Sciences BS/MLSB MS
- Combined BS/MS

Graduate

- MS, One-Year Option
- MS, Two-Year Option
- Advanced MS*, One-Year Option
- Advanced MS*, Two-Year Option
- Graduate Certificates (Part- and Full-Time Options)

Concentration Spotlight

Concentration in Biopharmaceutical Process Development

In collaboration with the [Jefferson Institute for Bioprocessing](#), this concentration is available to biotechnology students in the BS or MS one-year tracks

SAMPLE STUDENT WORK



Lori, an MLS student, is performing a blood type on a patient specimen.

For patients to safely receive blood, their blood type must be identified by a laboratory professional.

Patients suffering from anemia, such as sickle cell anemia, commonly receive blood transfusions.



JOB TITLE

Biotechnologist

OUTLOOK

With an ever-changing and evolving marketplace, adaptability and flexibility are paramount to success. Biotechnologists have the unique ability to adapt and innovate in any research environment and product-driven industry. Graduates of our program have been very successful in entering the workplace in various types of industry.

EMPLOYERS OF JEFFERSON GRADUATES

- Pharmaceutical Companies
- Biotechnology Companies
- Therapeutic Manufacturing
- Biomedical Industry-based Laboratories
- Academia

JOB TITLE

Cytotechnologist

GRADUATION RATE

100%

PLACEMENT RATE

100%

EMPLOYERS OF JEFFERSON GRADUATES

- Hospital Laboratories, Community and University Medical Centers
- Commercial Laboratories
- Academia
- Professional Societies
- In Vitro Diagnostics Companies

JOB TITLE

Medical Laboratory Scientist

GRADUATION RATE

100%

PLACEMENT RATE

100%

EMPLOYERS OF JEFFERSON GRADUATES

- Hospital Laboratories, Community and University Medical Centers
- Commercial Laboratories
- Academia
- Professional Societies
- In Vitro Diagnostics Companies



ASCP Board of Certification (BOC)

- Gold standard certification body for laboratory professionals, including **cytotechnologists** and **medical laboratory scientists**



American Society of Cytopathology (ASC)

- In association with the professional accreditation agency CAAHEP, the ASC's Cytology Program Review Committee oversees and guides professional education, training, and advancement



American Society for Clinical Laboratory Science (ASCLS)

- Grassroots organization and voice for **medical laboratory scientists** dedicated to making a positive impact in healthcare through professional, promotional, and educational activities

Ellen Robinson

STUDENT PROFILE

READINGTON, NJ
CLASS OF 2020

The 3+2 track option is what first attracted me to Thomas Jefferson University. It allowed me to jump right in with hands-on courses tailored to my field and finish my master's degree a year early.

“One of the advantages of being part of a small program is the ability to respond quickly to community needs. During the COVID-19 pandemic, the Biotechnology program was able to mobilize a small volunteer production line to utilize our skills to manufacture viral transport media (VTM) transport devices, which are important for COVID-19 testing. Our production line provided the Jefferson health system with important test kits needed to continue testing during the pandemic, despite the major shortage of national supply lines.”

To learn more about Ellen's involvement in this project, click [here](#).



Stedisha Wright

JAMAICA, WI
CLASS OF 2020



Stedisha's affixed fascination in cellular microscopy made her gravitation to cytotechnology effortless.

“On a search for universities that offer graduate study in cytotechnology, Thomas Jefferson University dominated the list. In addition to being an accredited program, the professors are well accomplished and experienced.”

In her pursuit of knowledge and experience to guarantee maximum performance in applicable laboratory sciences, she finds that setting high standards for learning and remaining focused and humbled are key attributes to success in this program.

Ayris Chenault

RIVERSIDE, CA
CLASS OF 2020

STUDENT PROFILE



I was searching for a versatile master's program that would facilitate my learning experience beyond the classroom, and I'm glad I found the Medical Laboratory Science program at Thomas Jefferson University.

“This program taught me that laboratory testing is at the core of nearly every decision a clinician makes when diagnosing and treating a patient.”

This level of healthcare is often overlooked, and I'm humbled to have the opportunity to learn about medicine from the clinical laboratory perspective. Laboratory medicine is an ideal profession for students who are passionate about medicine.

Future medical laboratory science students should be prepared to study long and hard for a very rewarding career!

Biotechnology



Dr. Scott Gygax, PhD
 Vice Chair, MLSB
 Associate Professor & Program Director

PhD, University of Connecticut Health Center, Farmington, CT
 BA, Gettysburg College, Gettysburg, PA

Dr. Gygax has 15 years of executive and research & development experience in the fields of biotechnology, molecular biology, and microbiology for the medical diagnostic industry. Dr. Gygax has 37 publications and 8 patents.



Sean Chadwick, MS
 Instructor

MS, University of Medicine and Dentistry of New Jersey, Newark, NJ
 BS, Richard Stockton College of New Jersey, Galloway Township, NJ

Mr. Chadwick has 13 years of research & development experience in the fields of biotechnology, molecular biology, and microbiology for the medical diagnostic and pharmaceutical industries. Mr. Chadwick has 13 publications and 3 patents.

RESEARCH INTERESTS

Development of diagnostic assays and reagents for the medical and biotechnology industries
 Development of quality management systems and investigation of product quality attributes

Cytotechnology and Cell Sciences



Dr. Tatiana Zorina, MD, PhD, CT(ASCP)
Associate Professor & Program Director

PhD, Academy of Sciences, St. Petersburg, Russia
MD, First Pavlov State Medical University of St. Petersburg, Russia
CT(ASCP), UPMC, Pittsburgh, PA

Dr. Zorina's research interests include development of a dendritic cell based antitumor vaccination methodology and immunomodulatory approaches for the treatment of type 1 diabetes mellitus.



Kelly Lennen, MS, CT(ASCP)
Instructor

MS, Thomas Jefferson University, Philadelphia, PA
BS, University of Pennsylvania, Philadelphia, PA

Ms. Lennen is a certified cytotechnologist and Jefferson alumna. For many years she has brought her experience in the lab back to the classroom and shares her passion for cytology and pathology.

“Working in pathology is always engaging for me. Each patient, each specimen, is like a unique puzzle to solve.”

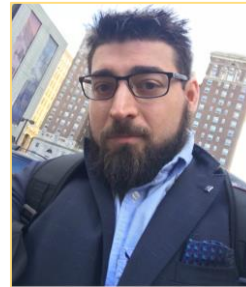
Medical Laboratory Science

FACULTY PROFILE



Valerie Jalicke, MS, MLS(ASCP)^{CM}
Program Director & Instructor

MS, Thomas Jefferson University, Philadelphia, PA
BS, Thomas Jefferson University, Philadelphia, PA



Michael Amato, MMedSc(Path),
MLS(ASCP)^{iCM}, SC^{iCM}, SM^{iCM}, MLT
Instructor

MS, Charles Sturt University, New South Wales, AUS
BS, University of Windsor, ON, CAN



Joshua Cannon, MS, MLS(ASCP)^{CM}
Instructor & Education Coordinator

MS, Thomas Jefferson University, Philadelphia, PA
BS, Thomas Jefferson University, Philadelphia, PA



Joy Gould, MS, SBB(ASCP)BB, C,
CQIA(ASQ), CPHQ
Instructor

MS, Thomas Jefferson University, Philadelphia, PA
BS, Rowan University, Glassboro, NJ



Shawn London, MS, CT(ASCP)

CYTOTECHNOLOGIST
AXIA WOMEN'S HEALTH
CLASS OF 2017

I chose Jefferson because of their sterling reputation for providing students with the knowledge, skills, and leadership required in today's healthcare environment. These attributes allow not only us as alumni to succeed, but more importantly, to help our communities and patients.

“Surrounded by passionate and compassionate individuals, Jefferson prepares students to be the best healthcare professionals for hospitals, laboratories, and most importantly, patients.”

While at Jefferson, take advantage of every opportunity available. Jefferson is a community of and for the students.

Sidney Yep, MS, MLS(ASCP)^{CM}

CLINICAL LABORATORY QUALITY ASSURANCE COORDINATOR
THOMAS JEFFERSON UNIVERSITY HOSPITAL
PHILADELPHIA, PA
CLASS OF 2017



I chose Jefferson for two reasons, the first being the prestige that comes from graduating from Thomas Jefferson University, and secondly, the fast-paced, accelerated graduate program offered.

As an MLS student, everything from classroom lectures to clinical rotations allowed me to gain an understanding of the different sides of the clinical laboratory and how they function separately as well as a whole.

“These experiences taught me the necessary skills needed to excel in healthcare, as well as helped me to view things not just from one angle, but from a more encompassing prospective.”

Next Steps

Office of Admissions

Undergraduate: Taylor Epley (Taylor.Epley@jefferson.edu)

Graduate: Seth Carver (Seth.Carver@jefferson.edu)

Visit www.Jefferson.edu/MLSB



Jefferson

Thomas Jefferson University