

VIRTUAL BASIC HISTOCOMPATIBILITY COURSE

Sponsored by
The American Foundation for Donation & Transplantation
ACHI Approved



**April 3-8, 2022
and
April 10-15, 2022**

PURPOSE: The curriculum is designed to provide the technician/technologist with a well rounded background in basic transplant immunology and related laboratory skills and provides the transplant fellow with basic immunology.

OBJECTIVES: By the end of the course, the successful student will:

1. Meet the needs of the beginning HLA technician/technologist by providing pertinent information about HLA testing, methodologies, and information necessary to meet the ASHI Statement of Competency.

SYLLABUS: Each student will receive a comprehensive course syllabus containing:

- Lecture summaries
- Lecture outlines
- References and bibliography

CURRICULUM: Course presentations will be pre-recorded and available for one week with Q&A sessions on Friday, April 8 and Friday, April 15. To accommodate all schedules, both AM and PM live Q&A sessions will be held and recorded for future reference.

APPLICANT REQUIREMENTS: Technologist in Histocompatibility Testing, with a minimum (3) months experience in an HLA Laboratory is eligible OR a B.S. in an appropriate biological science or MT(ASCP) or other appropriate registry.

This course will have a limited number of registrants; early registration is recommended.

Call the AFDT Office at 804-323-9890 OR email Arlene Skinner at skinner@afdt.org with program questions.

ORGANIZING COMMITTEE

Amy Hahn, PhD, F(ACHI), Chairman

Director, Albany Medical College
Transplant Immunology Laboratory
Albany, NY

Deborah Crowe, PhD, F(ACHI)

Director, Tulane University HLA Laboratory
New Orleans, LA

Michael Gautreaux, PhD, F(ACHI)

Director, HLA/Immunogenetics Laboratory
Wake Forest University Health Sciences
Winston-Salem, NC

Robert Liwski, MD, PhD, FRCPC

Medical Director, HLA Typing Laboratory
Dalhousie University, Queen Elizabeth II HSC
Halifax, Nova Scotia, Canada

INVITED SPEAKERS

Walter Herczyk, MT(ASCP), CHS(ABHI)

Director of Laboratory Services
Gift of Life Michigan
Ann Arbor, MI

Kelley Hitchman, MS, PhD, F(ACHI)

Director, Histocompatibility & Immunogenetics Laboratory
UT Health/University Transplant Center
San Antonio, TX

IMPORTANT DATES AND CONFERENCE REGISTRATION INFORMATION

- Contact Arlene Skinner with program questions
804-323-9890
skinner@afdt.org
- Registration Fee per participant is \$200
- Online registration accepted only via Credit Card
(no checks accepted)
- **Pre-recorded lectures should be viewed at your leisure
the week of April 3-8
Live Q&A sessions will be held for these lectures
Friday, April 8, 2022
10 – 11 am ET and 5-6 pm ET**
- **A second set of pre-recorded lectures should be viewed at your leisure
the week of April 10-15, 2022
Live Q&A sessions will be held for these lectures
Friday, April 15, 2022
10 – 11 am ET and 5-6 pm ET**
- **FEES ARE NON-REFUNDABLE**

BASIC HISTOCOMPATIBILITY COURSE—VIRTUAL CURRICULUM 2022

WEEK 1 PRE-RECORDED LECTURES (APRIL 3-8)

BASIC IMMUNOLOGY

(A. Hahn)

Innate immunity mediators
Adaptive immunity
Antibody structure, genetics, function
T cell receptor structure, genetics, function
MHC structure, polymorphism, inheritance
Antigen processing and presentation
T cell maturation, activation, effector functions
B cell development, activation
Antibody response—humoral immunity
Natural killer cell receptors, function

MOLECULAR GENETICS

(R. Liwski)

DNA Structure
RNA Structure and Function
Transcription and Translation
DNA Replication
MHC Gene Organization

TRANSPLANT IMMUNOLOGY

(K. Hitchman)

Innate and adaptive mechanisms of rejection
KIR
Graft vs. Host Disease (GVHD)
ABO
Sensitization
Preventative and therapeutic immunomodulation (induction, maintenance, desensitization)
Immune memory/anamnestic responses

MOLECULAR TYPING

(M. Gautreaux)

Facilities
DNA extraction
Forward and Reverse SSOP
Sequence-specific Primers
Quantitative PCR/Real Time-PCR
Sanger Sequencing-Based Typing
Next Generation Sequencing Typing
QC & Troubleshooting

ALLELES, EPITOPES, HAPLOTYPES & DISEASE ASSOCIATIONS

(A. Hahn)

History of HLA
Protein and molecular terminology
CREGS, epitopes, eplets
Serology typing and crossreactivity
Polymorphism
Linkage Disequilibrium, haplotypes
Naming of HLA antigens/alleles
Null alleles, G and P groups, NMDP codes
Disease Associations
HLA-associated drug hypersensitivity

**LIVE Q&A SESSIONS (FRIDAY, APRIL 8)
10-11 AM AND 5-6 PM ET**

BASIC HISTOCOMPATIBILITY COURSE—VIRTUAL CURRICULUM 2022, Cont.

WEEK 2 PRE-RECORDED LECTURES (APRIL 10-15)

SOLID ORGAN TRANSPLANTATION (M. Gautreaux)

History of transplantation
Kidney transplant overview
Other abdominal transplantation
Thoracic transplantation
Vascularized composite allografts
Organ allocation/UNOS/OPTN
Rejection

ANTIBODY DETECTION BY FLOW CYTOMETRY/LUMINEX (K. Hitchman)

Principles of Flow Cytometry
Anti-HLA antibodies and transplantation
Evolution of antibody testing methods
Common current antibody testing methods
Sample considerations (serum selection, sample quality, timing, interference)
Analytics and interpretation
Pre-transplant vs. Post-transplant (DSA) considerations
Troubleshooting

HEMATOPOIETIC STEM CELL TRANSPLANTATION (R. Liwski)

Autologous HSCT
Syngeneic HSCT
Allogeneic HSCT
HSC Sources
Donor Selection

CROSSMATCHING FOR TRANSPLANTATION (M. Gautreaux)

Complement-Dependent Cytotoxicity
Flow Cytometric Crossmatching
Virtual Crossmatch
Renal vs. Non-Renal Crossmatching

QUALITY PROCESS & REGULATORY COMPLIANCE (W. Herczyk)

Laboratory Quality Control
Laboratory Quality Assessment
Quality Improvement Plans
Laboratory Regulations/Compliance
Laboratory Safety

CHA & CHT EXAMINATION REVIEW SESSION (D. Sese)

Session to review information needed when sitting for the CHA and CHT Examinations

**LIVE Q&A SESSIONS (FRIDAY, APRIL 15)
10-11 AM AND 5-6 PM ET**