TWENTIETH HISTOCOMPATIBILITY SPECIALISTS COURSE

Sponsored by
The American Foundation for Donation & Transplantation
ABHI Approved

June 19-25, 2020
Hyatt Regency Portland
Portland, OR
PURPOSE: The curriculum is designed for senior technologists and new laboratory directors to raise the standards of practice in clinical histocompatibility testing by promoting excellence in clinical laboratory medicine and providing a fundamental educational program to prepare for the ABHI CHS or Diplomate certification.

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

1. Recall important topics in histocompatibility science;
2. Analyze disparate sets of data to arrive at a decision about a clinical test result; and
3. Relate covered topics to clinical histocompatibility testing.

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

- Lecture summaries
- Procedures with applications
- References and bibliography

CURRICULUM: Course presentation will be in didactic and interactive discussion format. The curriculum focus is on histocompatibility testing:

- Theory and principle
- Procedure
- Application
- Management

APPLICANT REQUIREMENTS: Technologist in Histocompatibility Testing, with a minimum (3) years working experience and/or a formal course in immunology or genetics; or a new laboratory director; and active ASHI membership (recommended).

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

*Call the AFDT Office at 1-800-543-6399 OR email Arlene Skinner at skinner@afdt.org with program questions.*
ORGANIZING COMMITTEE

Amy Hahn, PhD, D(ABHI), Chairman
  Director
  Albany Medical College
  Transplant Immunology Laboratory
  Albany, NY

Deborah Crowe, PhD, D(ABHI)
  Director
  Tulane University HLA Laboratory
  New Orleans, LA

Michael Gautreaux, PhD, D(ABHI)
  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
IMPORTANT DATES AND CONFERENCE REGISTRATION INFORMATION

- Contact Arlene Skinner with program questions
  1-800-543-6399
  skinner@afdt.org

- Registration Fee per participant is $1,600
  (includes syllabus, breakfast, lunch, breaks and farewell dinner)

- Optional Directors’ Session registration fee per participant is $150
  (includes box lunch)

- Online registration accepted only via Credit Card
  (no checks accepted)

- Hotel and travel arrangements and their costs will be
  the responsibility of the course participants

- Registration will open on Friday, June 18 from 5-8 pm
  and will resume on Saturday, June 19 at 7 am

- The course will end on Thursday, June 25 at 12 noon

- NO REFUNDS GRANTED FOR ANY REASON AFTER MAY 29, 2020
HOTEL ACCOMMODATIONS

The Hyatt Regency Portland at the Oregon Convention Center
375 NE Holladay Street
Portland, OR  97232
Phone:  971-222-1234

Friday, June 18—Thursday, June 25, 2020

Located in the city’s Lloyd District, the NEWLY OPENED Hyatt Regency Portland at the Oregon Convention Center anchors Portland’s convention package. It’s near the MODA Center and several transportation centers providing visitors with quick access to downtown Portland, the central eastside and the airport.


Cutoff for the Group Rate:  May 29, 2020

Room Rates

Single/Double Occupancy:  $169/night plus 15.3% tax
Triple Occupancy:  $184/night plus 15.3% tax
Quadruple Occupancy:  $209/night plus 15.3% tax
FRIDAY, JUNE 19
Registration 5:00 pm—7:00 pm

SATURDAY, JUNE 20

INTRODUCTION TO TRANSPLANT IMMUNOLOGY
"Laws" of transplantation
History and Impact
Immunity
Declaration of Istanbul

INNATE IMMUNITY
Pattern Recognition Receptors
Inflammation
Cytokines and Chemokines
Innate Immune Cells, NK Cells and NK Receptors

ADAPTIVE IMMUNITY
Immunoglobulin & TCR Gene Rearrangement
TCR, MHC & Accessory Molecule Interactions
T Cell Activation & Effector T Cells
B Cell Activation & Antibody Production

GENETIC CONCEPTS APPLICABLE TO IMMUNOGENETICS—PART 1-BASIC GENETICS
Gene Regulation and Expression
Gene Transmission - Mendelian Genetics
Genetic Change
Genomics and Proteomics

GENETIC CONCEPTS APPLICABLE TO IMMUNOGENETICS—PART 2—POPULATION GENETICS AND STATISTICS
Calculation of Gene (allele) Frequencies & Phenotype Frequencies
Hardy-Weinberg Testing
Haplotype Estimation and LD
Tests of Selection
Genetic Distance
Contingency Table Testing and Related Stats
Logistic Regression
Family-Based Association Tests

MHC GENETICS—PART 1
MHC Gene Complex - Loci, Gene classes
Non-MHC Genes
Class I and Class II Genes
Organization, Production-Structure
Expression & Regulation

MOLECULAR BASIS OF ALLORECOGNITION
Antigen Processing and Presentation
Allorecognition
Functions of Non-Classical MHC-Like Molecules
SUNDAY, JUNE 21

MHC GENETICS—PART 2
HLA Polymorphism
Variable Sites
Generation
Maintenance
Linkage Disequilibrium

MOLECULAR BIOLOGY TECHNIQUES—HLA TYPING
DNA Structure and Preparation
Denaturation/Annealing
Oligonucleotide Probe Hybridization
Labeling/Detection
DNA Synthesis, PCR, DNA Sequencing

IMMUNOREGULATION AND TOLERANCE
Thymic Selection
Activation vs Inhibition
Signals & Pathways
Apoptosis and Activation-Induced Cell Death
Clonal Deletion
Regulatory Cells

DNA BASED HLA TYPING METHODS
SSOPH, SSP, RT-PCR, SBT
Techniques to Identify HLA Alleles

NEXT GENERATION SEQUENCING
Wet Lab Preparation and QC of NGS Samples
Analysis and QC of NGS Data
Clinical Utility of NGS Typing for HSCT and Solid Organ Transplant

HLA INFORMATICS
Accessing the Tools on the IMGT/HLA and Other Websites
Matching Within a Family
Resolution of Typing for Unrelated Search
Results of Unrelated Donor/Cord Blood Search
Mismatched Donor Based on DP Epitope Matching
Other Useful Tools

HEMATOPOIETIC STEM CELL TRANSPLANTATION
Fatal Blood Diseases Treated with Transplantation
Donor Search Process & Donor Selection Criteria
HSC Transplant Procedure
Sources of Stem Cells
Laboratory Tests - Patient and Donor

TYPOGRAPHY CASE STUDIES
MONDAY, JUNE 22

HLA DISEASE ASSOCIATIONS AND DRUG HYPERSENSITIVITIES
Characteristics of HLA Associated Diseases
Molecular Mechanisms of Common Disease Associations
HLA Association with Drug Hypersensitivity

ABO BASICS AND BLOOD BANK ISSUES FOR THE HLA LAB
ABO Grouping, Subgrouping and Titers
ABO Incompatible Solid Organ Transplant
Other Blood Bank Issues Involving HLA Lab - TRALI, Platelet Refractoriness, Platelet Donor Selection

CHIMERISM
What Chimerism Is
Chimerism Testing in Cellular Therapeutics
Current Technologies Used to Quantify Donor Chimerism
How Chimerism Data Influences Clinical Decisions

OPTIONAL DIRECTORS’ TUTORIAL FOR ABHI DIPLOMATE

FREE AFTERNOON AND EVENING
TUESDAY, JUNE 23

SOLID PHASE ASSAY BASICS
Interpretation Issues
Problems and Pitfalls
Defining Unacceptable Antigens
Virtual Crossmatches

OPTIMIZING SOLID PHASE ASSAYS
SAB Optimization
Role of Standardization
Denatured Epitopes
Interference
Serum Treatment

ANTIBODIES: MECHANISM OF ACTION & NEW TOOLS
Antibody and Complement
C4d, C3d and C1q Assays
IgG Subclass Analysis
ABO Incompatible and Accomodation

BASIC PRINCIPLES OF FLOW CYTOMETRY
Basic Concepts of Flow Cytometry
Fluorescence and Fluorochromes
Lasers and Photodetectors
Compensation
Data Analysis
Fluorescence Units and Scales

ADVANCED FLOW CYTOMETRY
Application and Principles of Flow Crossmatch
Assay Optimization
Role of Standardization
Correlation with VXM
Cell Isolation and Treatment
Calculating and Validating Cutoffs
Choosing Control Sera

EPITOPE ANALYSIS FOR INTERPRETING HLA ANTIBODY RESULTS
Characterization of HLA Epitopes: TerEps and Eplets
HLAMatchmaker
Epitope Registry
Epitope Analysis Cases

ANTIBODY/CROSSMATCH CASE STUDIES
WEDNESDAY, JUNE 24

ANTIBODY ISSUES
Antibodies: The Basics
Therapeutics and Test Interference
Non-HLA Antibodies
Endothelial Crossmatch
HLA Antibodies in HSCT

TRANSPLANTING THE SENSITIZED PATIENT
Desensitization Strategies
Crossing DSA Barriers (Solid Organ & HSCT)
Quantifying HLA-Specific B Cell Memory
Kidney Paired Donation- HLA Perspective
KAS: New Transplant Opportunities

SOLID ORGAN TRANSPLANT IMMUNOLOGY—PART 1
Allograft Rejection: Types and Diagnosis
Clinical Approaches to Tolerance Induction
Immunomodulation

SOLID ORGAN TRANSPLANT IMMUNOLOGY—PART 2
Pathology
Allograft Pathology
Methods of Assessing Graft Function
KPD Programs

CLINICAL INTERVENTION IN TRANSPLANTATION
Causes of ESRD
Indications and Contraindications for Transplantation
Immunosuppression Protocols: Standard and New Drugs
Steroid Sparing
Targets of Immunosuppression
Role of Lab in Supporting Clinical Practice

EMERGING TECHNOLOGIES IN THE HLA LAB
Sponsor Presentations

FAREWELL DINNER
THURSDAY, JUNE 25

LABORATORY MANAGEMENT
Lab Management
Safety and Risk Management

COST REPORT
Interim Reimbursement Rates
Cost Report for Independent Labs

LAB ACCREDITATION
Inspection Process - ASHI & CAP
Other Regulatory Agencies - CMS, JC, UNOS, NMDP, FACT, OSHA, FDA

IMPLEMENTING AN EFFECTIVE QA PROGRAM
Designing a QA Program
Quality Indicators and Monitoring
Root Cause Analysis
QAPI
Competency Assessment

CLOSING
Remarks/Certificates/Evaluations