

American Foundation for Donation and Transplantation  
Histocompatibility Specialist Course Registration  
Please print or type.

Name: \_\_\_\_\_

Affiliation: \_\_\_\_\_

Business Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Emergency Contact (Name & Phone): \_\_\_\_\_

Check one:

- Director  Laboratory Supervisor  
 New Laboratory Director  Technologist  
 Laboratory Manager  Other: \_\_\_\_\_

A check must accompany this form to ensure registration.  
Make checks payable to American Foundation for Donation and  
Transplantation. Credit cards are accepted.

Mail check & form to: AFDT, 8154 Forest Hill Avenue, Suite 3  
Richmond, VA 23235-3255

Registration Fees (in US dollars)

	AFDT Member	Non-Member
Before Apr. 30	<input type="checkbox"/> \$1,500.00	<input type="checkbox"/> \$1,500.00
After Apr. 30	<input type="checkbox"/> \$1,750.00	<input type="checkbox"/> \$1,750.00
Optional Review Session (Fri., June 29, 12-2 pm)	<input type="checkbox"/> \$150.00	<input type="checkbox"/> \$150.00

Refunds will be made when requested in writing before April 30,  
2012. A \$50 fee will be charged on all refunds. There will be no  
refunds after May 14, 2012.

For information and registration, contact:

Arlene M. Skinner, Manager  
Continuing Education & Conference Planning  
8154 Forest Hill Avenue, Suite 3, Richmond, VA 23235-3255  
Tel: 804-323-9893; Fax: 804-323-1300; Email: [skinner@seopf.org](mailto:skinner@seopf.org)

Note: Hotel and travel arrangements and their costs will be the  
responsibility of course participants. Registration will be Friday,  
June 22, 2012 and course will end on Friday, June 29 at 2:00 pm.  
Meals will be provided each day except Friday, June 22, lunch  
on Monday, June 25, and Friday, June 29. On Saturday, June 23,  
dinner will be provided during the Welcome Reception.

Telephone: 1-800-693-6763 – Ask for the room reservations dept.  
and reference attendance at the AFDT Histocompatibility Specialist  
Course. Cutoff for group rate: June 1, 2012.

Room Rates: \$69++ single or double occupancy weeknights; \$99++  
weekends (Friday & Saturday). Tax rate is currently 12%.

Pre-requisite Reading:

1. SEOPF Molecular Typing 2000 Manual, 2nd Edition . Editor - Manning, C.  
(Pub. SEOPF, 8154 Forest Hill Avenue, Suite 3, Richmond, VA  
23235-3255).
2. Immunobiology, The Immune System in Health and Disease. Sixth Edition.  
Janeway, Jr., CA, Travers, P., Walport, MS. Garland Publishing, Inc.,  
New York, 2001.
3. Manual of Molecular and Clinical Laboratory Immunology, 7th ed.  
(B Detrick, RG Hamilton, JD Folds, Eds.) Section Q: Transplantation  
Immunology, MS Leffell, Ed. 2006. ASM Press, Washington, D.C..
4. Flow Cytometry First Principles. 2nd Edition, 2001. Givan, Alice L.  
(Pub. Wiley-Liss, New York, NY).
5. Flow Cytometric Assessment of HLA Alloantibodies. In: Current Protocols  
in Cytometry, 2004. Bray, RA, Gebel, HM, Ellis, TM.

Highly recommended review:

1. Reviews in Immunogenetics, Vol. 1 and Vol. 3, 1999, Munksgaard,  
Copenhagen, Denmark.
2. Handbook of Human Immunology. 1997 Leffell, Donnenberg and Rose,  
CRC Press.
3. Manual of Clinical Laboratory Immunology, Fifth Edition, 1997, eds:  
Rose, deMacario, Fold, Lane and Nakamura, ASM Press, Section R:  
“Transplantation Immunology and Immunogenetics” and Zachary, AA and  
Steinberg, AG: Statistical Analysis and Applications of HLA Population Data,  
pp. 132-140.
4. The HLA Facts Book, 2000, Steven G.E. Marsh, Peter Parham and  
Linda D. Barber, Academic Press, San Diego, CA.
5. HIPAA (<http://hhs.gov/news/press/2001/01privacy.html>) pp. 1-50.

Recommended review:

1. ASHI Laboratory Manual, 2001 4th Edition, Editors: Hahn, A., et al.,  
(Pub. ASHI, 17000 Commerce Parkway, Suite C, Mount Laurel, NJ 08054).
2. Flow Cytometry First Principles, 1992, Givan, Alice, (Pub. Wiley-Liss,  
New York).
3. Flow Cytometry Principles for Clinical Laboratory Practice: Quality  
Assurance for Quantitative Immunophenotyping, 1995, Marilyn Owensand,  
Michael Loken (Pub. Wiley-Liss, New York).
4. “Flow Cytometric Crossmatching in Solid Organ Transplantation”, 1994, RA  
Bray, In Methods of Cell Biology: Flow Cytometry, Vol 41, Darzynkiewics,  
Z., Crissman, HZ, and Robinson, JP eds. Chapter 7, pp 103-119.
5. Bray R., Nickerson P., Kerman R., and Gebel H. Evolution of HLA Antibody  
Detection: Technology Emulating Biology. Immunologic Research 29:41-53, 2004.
6. Bray R.A. and Gebel H.M. Clinical Utility of Flow Cytometry in Allogeneic  
Transplantation. in: Flow Cytometry in Clinical Diagnosis, 4th Ed.; Carey J.  
McCoy J. and Keren D. eds. pgs. 275-294. ASCP Press, Chicago, IL. 2007

Reading for DNA & Stem Cell Lectures:

1. Hurley, C. DNA methods for HLA typing. <http://www.dodmarrow.org> under  
scientific services/educational material. 2008.
2. Hurley, C. Acquisition and use of DNA-based HLA typing data in bone  
marrow registries. Tissue Antigens 49:323, 1997.
3. Holdsworth, R. et al. The HLA Dictionary 2008: a summary of HLA-A, -B,  
-C, -DRB1/3/4/5, -DQB1 alleles and their association with serologically  
defined HLA-A, -B, -C, -DR and -DQ antigens. Tissue Antigens 73:95, 2009.
4. Marsh, S. et al. Nomenclature for factors of the HLA system, 2010. Tissue  
Antigens, in press.
5. Robinson, J. et al. IMGT/HLA and IMGT/MHC: sequence databases for  
the study of the major histocompatibility complex. Nucleic Acids Research  
31:311, 2005.
6. ASHI Standards related to DNA-based HLA testing.
7. Cutler, C. and J. Antin. An overview of hematopoietic stem cell transplanta-  
tion. Clinics in Chest Medicine 26:517, 2005
8. Copelan, E. Hematopoietic stem-cell transplantation. New England Journal  
Medicine 354:1813, 2006

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American Foundation for Donation and Transplantation  
8154 Forest Hill Avenue, Suite 3  
Richmond, VA 23235-3255

# Sixteenth Histocompatibility Specialist Course

ABHI Approved

New York, New York Hotel & Casino

June 22-29, 2012

LAS VEGAS

Sponsored by

American Foundation for Donation and Transplantation  
(formerly South-Eastern Organ Procurement Foundation)

**PURPOSE:** The curriculum is designed for senior technologists and new laboratory directors involved in the day to day management and development of the histocompatibility laboratory. Applicants should have a background in immunology, immunogenetics and histocompatibility.

**OBJECTIVE:** Program objective is to establish a structured curriculum leading to:

- Raising the standards of practice in clinical histocompatibility testing.
- Providing a fundamental educational program leading to ABHI Histocompatibility Specialist Certification (CHS).
- Promoting excellence in clinical laboratory medicine.

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

- Lecture summaries
- Procedures with applications
- References and bibliography

• References and bibliography

• Procedures with applications

**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 of 3 years working experience and/or a formal course in immunology or genetics; or a new laboratory director; active ASHI membership (recommended); and pre-requisite reading completed.

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

## FRIDAY, JUNE 22

Registration 5:00 - 8:00 pm

### SATURDAY, JUNE 23

#### Basic Concepts of Transplant Immunology

- Transplantation as a Model for Immune Studies
- Information Obtained from Animal Studies
- Basis of Allotransactivity
- Routes of Sensitization
- Memory Responses
- Reactivity to Allografts
- Cytokines and Chemokines
- NK Cells
- Antigen Processing Cells- Importance of Dendritic Cells
- Pathways Critical to Immune Response
- Targets of Immunosuppression
- TCR, MHC & Accessory Molecule Interactions
- Antibody and Complement
- Cell-Mediated Mechanisms
- Graft Versus Host Disease

#### Genetic Concepts Applicable to Immunogenetics

- Gene Regulation and Expression
- Gene Transmission-Mendelian Genetics
- Genetic Change
- Hardy-Weinberg Equilibrium
- Linkage/Recombination
- Applications of Population Data
- Bayes' Theorem
- Chi Squared Test-Goodness of Fit and Contingency Tables
- Correlation Coefficient
- T-Test, F Statistic, Actuarial Survival, Disease Associations
- Match Probability and Cpri

## SUNDAY, JUNE 24

### MHC Genetics

- MHC Gene Complex Loci, Gene Classes, Non-MHC Genes, Class I & II Genes
- Organization, Production-Structure, Expression, Regulation
- Polymorphism, Variable Sites
- Generation, Maintenance
- Linkage Disequilibrium

### Immune Regulation: Tolerance

- Activation vs. Inhibition: Signals & Pathways
- Apoptosis and activation-induced cell death
- Clonal Deletion
- Regulatory Cells

### Transplant Immunology

- Allograft Rejection: types and diagnosis
- Clinical approaches to Tolerance Induction
- Immunomodulation
- Pathology
- Methods of assessing graft function

## ORGANIZING COMMITTEE

### Chair

Jean Heneghan, MS, CHS  
Telephone: (504) 988-5259  
jhenegh@tulane.edu  
Tulane HLA Laboratory  
New Orleans, LA

Deborah Crowe, Ph.D., Director  
DCI Laboratory, Inc.  
Nashville, TN

Mary Leffell, Ph.D.  
Johns Hopkins School of Medicine  
Baltimore, MD

Andrea Zachary, Ph.D.  
Johns Hopkins School of Medicine  
Baltimore, MD

*Inquiries about the program should be addressed to the chair of the organizing committee.*



## FRIDAY, JUNE 29

### Management

- Strategic/Long Range Planning
- Problem Solving/Conflict Resolution
- Marketing
- Resources

### Management II

- Reimbursement-Cost Report

## ABHI CHS-CHT-CHA-DIPLOMATE EXAM UPDATE (11:30 am - 12:00 noon)

## OPTIONAL TUTORIAL FOR DIPLOMATE EXAM Session for Directors (12:00 - 2:00 pm)

## WEDNESDAY, JUNE 27

### Transfusion Support

- Platelet Antibodies
- Selection of platelet donors for highly sensitized patients
- TRALI

### Patient Antibody Issues

- Relevance of Antibodies & Antibody Characteristics
- Highly Sensitized Patient Issues
- Public, GREG, Epitopes
- Auto Antibodies
- Anti-Idiotypic Assays
- Impact of Antibodies on Allografts: CAN vs. Accommodation

### Solid Phase Immunoassays

- Issues
- Problems and Pitfalls
- Virtual Crossmatches and Defining Unacceptable Antigens

### Implementing an Effective QA Program

- Proficiency Testing
- Test Validation, CLIA, ASHI, CMS, etc. Requirements

### Laboratory Accreditation

### Specialty Assays: Humoral

- Endothelial Cell Crossmatch
- Tests of Non-HLA Antibodies
- Tetramers for Quantifying B Cells
- C4d and Clq on the Luminesx Platform

## THURSDAY, JUNE 28

### Molecular Biology Techniques – HLA Typing

- DNA Structure and Preparation, Denaturation/Annealing,
- Polymerase Chain Reaction
- DNA Sequencing, DNA-Based HLA Typing Methods
- Hands On “Reagents and DNA Sequences”

### Coping With HLA Complexity

- Allele Names
- Resolution of DNA-Based Typing
- Ambiguities and Their Resolution
- Impact of New Alleles on Test Interpretation
- Linking Alleles to Serologic Types

### HLA Informatics

- Accessing the Tools on the IMG/HLA and Other Websites
- Review Homework on Web Tools

### Quality Assurance and Quality Control For DNA-Based Testing

### Hematopoietic Stem Cell Transplantation, Part I

- Purpose, Process, Indications, Complications, Strategies to Reduce Allorecognition

## HISTOCOMPATIBILITY SPECIALIST CURRICULUM 2012

## MONDAY, JUNE 25 (FREE AFTERNOON)

### Clinical Intervention in Transplantation

- Causes of ESRD
- Indications & Contraindications for transplantation
- Immunosuppression Protocols: standard & new drugs, steroid sparing
- Role of the laboratory in supporting clinical practice

### Basic Principles of Flow Cytometry

- Basic Concepts of the Flow Crossmatch

### Advanced Flow Cytometry

- Applications of the Flow Crossmatch Pre and Post Transplant
- Flow Specificity Beads
- Test Interpretation

### Case Studies

## TUESDAY, JUNE 26

### Transplanting the Sensitized Patient

- Desensitization
- Donor kidney exchange

### HLA Disease Associations

- Characteristics of HLA Associated Diseases
- Molecular Mechanisms
- Other Susceptibility genes-cytokine, Toll receptors

### Complement Activation/ Accommodation

### Specialty Cellular Assays

- CFSE-MLR
- MLC-Limiting Dilution Analysis
- Intracellular Cytokines
- Multiparameter Assay
- Cytokine Gene Polymorphism
- ImmunKnow
- Genomics and Proteomics

### Immunogenetics in Vaccine Design & Pharmacogenomics

- Need for new vaccines in infectious disease and immunotherapy
- Genetic variation in response to vaccines, individual and population differences
- HLA and other immunogenetic associations w/vaccine responsiveness
- Reverse Immunogenetics and Epitope prediction
- Adverse Drug Reactions-HLA Associations

### Case Studies