

# THE COMPLETE AUDIO COLLECTION



## ***RECORDED LECTURE SETS***

Sponsored by  
Sandra Rosen-Bronson, Ph.D., D. (ABHI)  
Georgetown University  
Washington, DC

An ABHI Approved Continuing  
Education Program

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**Set 1**


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**Topics for Beginners**


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March 27, 2003 **HLA for Beginners** — Sandra Rosen-Bronson, Ph.D., Georgetown University Hospital, Washington, DC

This basic lecture is of particular interest to technologists new to the field of histocompatibility as well as transplant nurses and coordinators interested in learning more about the HLA system and its role in transplantation.

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May 8, 2003 **DNA for Beginners** — Carolyn Hurley, Ph.D., Georgetown University, Washington, DC

This lecture reviews basic molecular biology concepts and provides a basic overview of methodologies used for DNA-based HLA typing methods.

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August 22, 2006 **Population Genetics 101** — Richard Single, Ph.D., University of Vermont, Burlington, VT

Haplotype analyses have long been recognized as important in the study of genetic components of human disease. Likewise, as the use of unrelated donors for hematopoietic stem cell transplantation becomes more common, it is increasingly important for those involved in HLA typing and donor search to understand concepts such as allele frequency, haplotype frequency, and linkage disequilibrium. Participants will learn about these and other basic principles of population genetics.

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October 3, 2006 **Histocompatibility Testing for Beginners** — Sandra Rosen-Bronson, Ph.D., Georgetown University Hospital, Washington, DC

This basic lecture provides a ‘big picture’ look at what the typical histocompatibility laboratory does. Participants will learn about the history and evolution of standard assays as well as the evolving role of the lab as an integral member of any transplant program.

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**Set 2 Basic Immunology**


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March 2, 2004 **Transplant Immunology 101** — Mark Grebenau, M.D., Ph.D., Novartis Pharmaceuticals, East Hanover, NJ

This basic lecture provides an overview of the immune system and the immune response mounted against transplanted cells, tissues and organs.

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August 3, 2004 **Antigen Presentation** — Mark Grebenau, M.D., Ph.D., Novartis Pharmaceuticals, East Hanover, NJ

This lecture describes how antigens are processed and presented to T cells by HLA molecules. This conference will be particularly useful for technologists studying for certification exams.

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March 22, 2005 **Humoral Immunity** — Mark Grebenau, M.D., Ph.D., Novartis Pharmaceuticals East Hanover, NJ

This beginner level lecture reviews how B-cells develop and are stimulated by antigen to become antibody producing plasma cells or memory B cells. This conference is particularly useful for technologists studying for the CHT or CHS certification exams.

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April 5, 2005 **Hero or Villain: The Immune System in BMT** — Christopher J. VandenBussche, B.S.  
Georgetown University Medical School, Washington, DC

This beginner level lecture describes the immune responses that occur in the stem cell transplant patient. Participants will learn how the immune system is critical for a patient's survival while at the same time can be the cause of a life threatening graft versus host response.

### ***Set 3 Key Components of the Immune System***

March 7, 2006 **An Overview of Immunology** — Carolyn Hurley, Ph.D., Georgetown University,  
Washington, DC

This lecture provides participants with a broad foundation for understanding the immune system in general. Some key components and regulators of immunity are introduced by Dr. Hurley and are discussed in detail in other lectures in this set.

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April 18, 2006 **Regulator T-Cells** — William Burlingham, Ph.D., University of Wisconsin, Madison, WI

In recent years there has been much progress in our understanding of the cells and molecules involved in immunoregulation and induction of allograft tolerance. This lecture reviews what is currently known about mediators of T-cell-dependent active immune regulation.

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May 2, 2006 **Effector Mechanisms of Antibody and Complement** — William Baldwin, M.D., Ph.D.,  
Johns Hopkins University School of Medicine, Baltimore, MD

This lecture discusses the contribution of antibody and complement to the rejection of organ transplants. Participants will learn about studies that have shown how complement stimulates vascular endothelial cells to express coagulation factors, adhesion molecules, and growth factors. They will learn how complement-mediated activation of endothelial cells may contribute to acute and chronic allograft rejection.

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June 20, 2006 **Lipid Rafts and B-Cell Activation** — Susan Pierce, Ph.D., National Institute of Allergy and  
Infectious Disease, Bethesda, MD

Recent biochemical evidence indicates that an early event in signal transduction by the B-cell antigen receptor (BCR) is its translocation to specialized membrane subdomains known as lipid rafts. These plasma membrane microdomains are implicated in the assembly of diverse signaling pathways. Participants will learn about current research concerning the role of lipid rafts in triggering immune responses.

### ***Set 4 The Mechanics of an HSC Donor Search: Behind the Scenes***

July 27, 2004 **Demystifying the NMDP** — Michelle Setterholm, M.T., National Marrow Donor Program,  
Minneapolis, MN

This lecture discusses the role of the NMDP in facilitating blood and marrow transplantation. Participants will learn about the mission of the NMDP and how it works. They will also learn how their laboratory or transplant program can more effectively work together with the NMDP to expedite the donor search process.

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April 19, 2005 **TRANS Link 101** — Laurie Olesen, R.N., C.H.T.C., National Marrow Donor Program, Minneapolis, MN

This lecture teaches participants about the NMDP's TRANS Link computer program. Understanding what TRANS Link is and how to effectively use it can help transplant programs and HLA laboratories work together in order to quickly identify the best donor for BMT patients in urgent need of a transplant.

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September 13, 2005 **Things Everyone Should Know About Human Protection and Consent** — Roberta King, M.P.H., Research Support Services, National Marrow Donor Program, Minneapolis, MN

As new tests are developed and new loci detected that may play a role in donor selection or transplant outcome, the scientific and medical communities are faced with new questions of human subjects' rights protection, privacy, and consent for testing. This lecture discusses these issues and will provide the listener with general guidelines for navigating the internal review-board process.

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June 27, 2006 **An Introduction to HapLogic™** — Judy Davis, C.H.T.C., National Marrow Donor Program, Minneapolis, MN

This lecture describes Haplogic, the new computer-based donor search algorithm developed by the National Marrow Donor Program. Participants will gain an understanding of the theory behind the program and will learn how to interpret and best use the information provided on a donor search report.

## ***Set 5      Transfusion Medicine and Infectious Disease Testing***

August 14, 2003 **Transfusion Related Acute Lung Injury (TRALI)** — Susan Roseff, M.D., Virginia Commonwealth University School of Medicine, Richmond, VA

This lecture discusses TRALI, an often misdiagnosed, life threatening pulmonary syndrome thought to be caused by HLA specific antibodies of donor origin present in plasma containing blood products.

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June 29, 2004 **Transplantation: Unique Challenges in Transfusion Medicine** — Shealynn Harris, M.D., Transfusion Medicine Service, Department of Pathology, Emory University Hospital, Atlanta, GA

Transplant patients can present unique problems in transfusion medicine. For example, complications may include TRALI, GVHD, platelet refractoriness, and confusing RBC phenotypes. This lecture provides an overview of transplant patient related issues critical to transfusion medicine.

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October 4, 2005 **Emerging Infectious Diseases and Their Implications to Transplantation** — Robin Avery, M.D., Cleveland Clinic Foundation, Cleveland, OH

With new diseases such as West Nile virus, encephalitis, and vCJD, there is increasing concern about the safety of blood and tissue donation. This basic level lecture discusses various potential issues and concerns raised by new infectious agents in the transplant arena.

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November 28, 2006 **Viral Infections in the Immunocompromised Host** — Robin Avery, M.D.,  
Cleveland Clinic Foundation, Cleveland, OH

Immunocompromised patients have alterations in phagocytic, cellular, or humoral immunity that increase both the risk of infection and the ability to combat infection. In transplant patients, viral infections can be particularly dangerous and difficult to treat. This lecture provides an overview of the viruses most critical in transplant patients and discusses current approaches for prevention and treatment.

## ***Set 6 Approaches to Hematopoietic Stem Cell Transplantation***

April 17, 2003 **Non-Myeloablative Hematopoietic Stem Cell Transplant: Theory and Practice** —  
Marcos de Lima, M.D., M.D., Anderson Cancer Center, Houston, TX

This lecture discusses methods for transplantation that involve the use of non-ablative doses of chemotherapy or radiation therapy prior to stem cell transplant. The speaker reviews the theory behind this relatively new approach to stem cell transplantation.

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July 31, 2003 **Cord Blood as a Source of Stem Cells for Transplantation** — Lee Ann Baxter-Lowe, Ph.D.,  
University of California, San Francisco, San Francisco, CA

This lecture is of general interest to all individuals interested in hematopoietic stem cell transplantation. Dr. Baxter-Lowe discusses issues concerning cord blood banking and reviews current data concerning cord blood transplantation.

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May 17, 2005 **Innovative Approaches for Haploidentical Stem Cell Transplant in Children** —  
Rupert Handgretinger, M.D., Ph.D., Stem Cell Transplant and Gene Therapy Program, St Jude Children's  
Research Hospital Memphis, TN

This lecture discusses how by manipulating bone marrow cells to either enrich stem cells or specifically deplete mature T cells, one haplotype matched related donors can be used to successfully transplant patients who otherwise have no suitable bone marrow donor.

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September 19, 2006 **Graft Versus Host Disease: Its Types and Manifestations** — Richard Maziarz, M.D.,  
Oregon Health and Science University, Portland, OR

This lecture provides an overview of what graft versus host disease (GVHD) is and discusses the difference between acute and chronic GVHD. Participants will learn about the molecular and immunologic interactions involved as well as current research initiatives and advances in preparative regimens and treatment options.

## ***Set 7 Strategies for Finding the Best HSC Donor***

April 24, 2003 **Donor Search Strategies: A Systematic Approach** — Linda Edwins, CHS, Clearwater, FL;  
Sandra Rosen-Bronson, Ph.D., Georgetown University Hospital, Washington, DC

This lecture is of particular interest to transplant coordinators and histocompatibility professionals involved in donor selection for hematopoietic stem cell transplantation. This lecture helps you develop a systematic stepwise approach to reviewing difficult patient searches. Tools are provided to help you develop search strategies and sample cases are reviewed to help you learn how to apply these strategies to a patient search.

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April 20, 2004 **Search Strategies I: Finding the Best Mismatched Donor** — Machteld Oudshoorn, Ph.D., Eurodonor Foundation, Leiden, Netherlands

This lecture discusses the various factors that should be taken into consideration when a patient does not have a perfectly matched donor available for an unrelated stem cell transplant. The conference addresses a variety of questions including: How many alleles can be mismatched? What search strategies should be used to find the best mismatch? What non-HLA factors such as age and sex should be considered?

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October 26, 2004 **Search Strategies II: Case Studies** — Sandra Rosen-Bronson, Ph.D., Georgetown University Hospital, Washington, DC

This lecture reviews a series of BMT case studies which demonstrate how the search strategy principals and tools described in earlier lectures can be used to effectively and efficiently identify the optimal donor for a patient.

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November 15, 2005 **Donor Search Strategies III: More Case Studies** — Sandra Rosen-Bronson, Ph.D., Georgetown University, Washington, DC

This lecture continues to build on search strategy principals and tools described in prior teleconferences. The search process for individual BMT case studies are discussed in depth and demonstrate how to effectively and efficiently identify the optimal donor for a patient in need of a stem cell transplant.

## ***Set 8 Critical Factors in HSC Transplant Outcome***

September 25, 2003 **HLA Matching Requirements for Hematopoietic Stem Cell Transplantation: A Review of Current Data** — Marcelo Fernandez-Vina, Ph.D., Georgetown University, Washington, DC; Victoria Turner, Ph.D., St. Jude Hospital, Memphis, TN; Sandra Rosen-Bronson, Ph.D., Georgetown University Hospital, Washington, DC

This conference is of particular interest to transplant coordinators and histocompatibility professionals involved in hematopoietic stem cell transplantation. The lecture provides an overview of current and emerging data concerning matching requirements for HSC transplantation. The discussion includes evolving data concerning other donor variables such as age and sex matching versus level of HLA match and current information concerning potential differential matching requirements for adults versus pediatric patients.

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July 17, 2003 **KIR: What are they? How does one KIR “Type”? How Might KIR Play an Important Role in Transplantation Outcome?** — Katharine Hsu, Ph.D., Memorial Sloan Kettering Cancer Center, New York

This lecture describes killer cell immunoglobulin-like receptors (KIR) and how they may be important in transplantation as well as methods currently used for KIR typing.

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September 27, 2005 **KIR Genotyping for BMT Transplantation** — Vicky Turner, Ph.D., St Jude Children’s Research Hospital Histocompatibility Laboratory, Memphis, TN

Following the initial description of the polymorphic killer immunoglobulin-like receptors (KIR), much attention has been focused on the role of KIR in stem cell transplant outcome. This lecture discusses how KIR genes are typed as well as current evidence concerning the role of KIR polymorphism in transplantation.

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May 16, 2006 **Significance of Cytokine Polymorphism in Hematopoietic Transplantation** — Riddish Shah, M.B.B.S, Ph.D., Georgetown University, Washington, DC

Cytokine gene polymorphisms have increasingly become a topic of interest in laboratories that traditionally have engaged in histocompatibility testing and transplantation. This interest stems from the fact that certain of these polymorphisms have been shown to correlate with cytokine plasma levels and may contribute to the outcome of both solid organ and hematopoietic stem cell transplantation. This lecture reviews current research on the role of cytokine polymorphisms in HSC transplantation.

## ***Set 9***                      ***Histocompatibility Assay Optimization***

May 15, 2003 **Back to the Basics: Understanding, Optimizing and Troubleshooting AHG-CDC Assays** — Ann Fuller, CHS, University of Utah, Salt Lake City, Utah

Although there are many new technologies being employed by histocompatibility laboratories, AHG-CDC-based assays are still critical and routinely used tests in most laboratories. This lecture reviews the basic concepts and application of anti-human globulin (AHG) augmented lymphocytotoxicity assays. A discussion of assay optimization and troubleshooting is included.

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October 9, 2003 **IvIg Desensitization Protocols: The Laboratories Role** — Cathi Murphy, CHS, Southwest Immunodiagnostics, San Antonio, TX; Dolly Tyan, Ph.D., Cedars-Sinai Medical Center, Los Angeles, CA  
Andrea Zachary, Ph.D., Johns Hopkins University, Baltimore, MD

This lecture covers the different laboratory methods used to evaluate and support IvIg desensitization protocols for transplant patients with donor specific HLA antibodies. The lecture includes description of CDC, ELISA, and flowcytometric methods.

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August 10, 2004 **Implementing, Optimizing, and Troubleshooting the B Cell Crossmatch** — Cathi Murphey, M.T., C.H.S., Southwest Immunodiagnostics Inc., San Antonio, TX

As evidence increases that the presences of donor specific HLA class II antibody represents an increased risk to successful transplant outcome, more and more laboratories are routinely performing a B cell crossmatch prior to transplantation. However, this assay can be difficult to standardize and technically challenging. This lecture discusses ways to optimize and troubleshoot flowcytometric B cell crossmatches.

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August 15, 2006 **Standardization of Flowcytometric Assays** — Wayne Shumway, C.H.S., LifeLink Foundation, Inc., Tampa, FL

Histocompatibility laboratories everywhere are more and more being asked to develop standardized assays with results that can be meaningfully compared between different laboratories. This lecture discusses ways that labs can begin to meet this need. It addresses quality control issues as well as the pros and cons of using MESF versus channel-shift values for calculating results.

## ***Set 10***                      ***Transplantation and Immunogenetics Potpourri***

April 17, 2002 **Xenotransplantation: The Promise and the Problems** — A. Joseph Tector, M.D., Indiana University Department of Surgery, Indianapolis, IN

Learn about the therapeutic potential, immunologic hurdles and infectious risks of xenotransplantation.

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April 6, 2004 **Recent Advances in Stem Cell Therapy for Autoimmune Disorders** — Richard Burt, M.D., Northwestern Memorial Hospital, Chicago, IL

This lecture discusses how stem cell transplantation is being used as a treatment for an increasing number of autoimmune diseases including lupus, multiple sclerosis, and other debilitating and life threatening diseases.

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September 21, 2004 **Tumor Vaccines: What are They and How are They Made?** — Francesco Marincola, M.D., Department of Transfusion Medicine, NIH Clinical Center, Bethesda, MD

Tumor antigen-specific vaccines used for cancer immunotherapy can generate tumor specific CD8 responses detectable in PBMCs and in turn infiltrating lymphocytes. This lecture discusses how tumor vaccines are developed and why they are useful as therapeutic agents for certain types of cancers.

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July 11, 2006 **The Role of Innate Immunity in Reproduction** — Danny Schust, M.D., Boston University School of Medicine, Boston, MA

During human pregnancy, allogenic trophoblast cells are exposed directly to maternal immune effector cells. In recent years, much has been learned about the specialized molecules and cells involved in creating an immunologically privileged site at the maternal-fetal interface. In this lecture, participants will hear about current research and learn how pregnancy may be an informative model for studying transplant tolerance.

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## ***Set 11            Laboratory Management: Topics for Supervisors***

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March 16, 2004 **The Ins and Outs of CPT Codes** — Pamela Kimball, Ph.D., Medical College of Virginia, Richmond, VA; Ronald Kerman, Ph.D., University of Texas Medical School, Houston, TX ; William LeFor, Ph.D., LifeLink Foundation Inc., Tampa, FL

This lecture is of interest to all individuals involved with billing for histocompatibility testing. Participants will learn how existing CPT codes can be successfully and legitimately used to bill for assays performed in histocompatibility laboratories.

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April 27, 2004 **Improving the Performance Improvement Process** — Barbara Parsons, M.A., M.T., Johns Hopkins Hospital, Baltimore, MD

This lecture is of interest to anyone interested in performance improvement. Laboratories, donor centers, and transplant centers alike all have accrediting agencies closely scrutinizing their programs for quality assurance and process improvement. This conference helps participants understand the overall principle of performance improvement and learn how a well-designed program can make performance improvement an integral part of their institution's daily operations.

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July 26, 2005 **Creative Laboratory Management: The Next Level** — John Hart, M.B.A., C.H.S., Johns Hopkins University Immunogenetics Laboratory, Baltimore, MD

In this lecture participants will learn about management and organizational functions critical to operating an effective, efficient, and financially stable histocompatibility laboratory.

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August 23, 2005 **Effective Time Management in the Workplace** — Steward Hickman, S.P.H.R.,  
The Learning Network, Georgetown University Hospital, Washington, DC

In this era of reduced budgets and heavy workloads, effective time-management skills are essential. This lecture teaches tools for more efficient time utilization whether at work or at home.

## ***Set 12*** ***More Topics for Supervisors***

April 3, 2003 **An HLA Nomenclature Update for 2003** — Ekkehard Albert, Ph.D., Laboratory of  
Immunogenetics, LMU, Munich, Germany

This lecture covers basic concepts of genetic terminology relevant to histocompatibility and immunogenetics. Dr. Albert describes HLA nomenclature and will give an overview of important nomenclature changes and updates recently implemented by the WHO Nomenclature Committee.

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May 4, 2004 **Efficient and Effective Assay Validation** — Lori Osowski, M.S., C.H.S.,  
Ashley Hurst, M.T., C.H.T., American Red Cross, National HLA Laboratory, Baltimore, MD

This lecture teaches participants how to design appropriate validation studies to meet the requirements of ASHI and CLIA for accreditation of new assays being implemented in their laboratory.

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July 13, 2004 **Post Transplant Antibody Testing** — Elaine Reed, Ph.D., UCLA Immunogenetics Center,  
Los Angeles, CA

HLA antibodies can reoccur or occur *de novo* post transplant. There is increasing evidence that donor specific antibodies play a role in graft rejection and tissue damage. There is also evidence that the detection of donor specific HLA antibody or C4d deposition can provide early warning of rejection. This lecture discusses various assays that can help monitor and predict transplant rejection.

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May 23, 2006 **Thermal Cycler Quality Control and PCR Validation** — Mary Span, M.Sc.,  
Cyclertest, B.V., Landgraaf, The Netherlands

This lecture discusses innovative options for thermal cycler quality control and troubleshooting. Participants will also learn about effective protocols for validation of PCR-based assays.

## ***Set 13*** ***Organ Allocation: Ethics, Networking and Collaboration***

November 21, 2006 **The Future of Kidney Allocation in the U.S.** — Mark Stegall, M.D.,  
Mayo Clinic, Rochester, MN

There is an increasing number of people in the United States who are waiting for kidneys from deceased donors. In response to this growing shortage, the OPTN/ UNOS Board initiated a review of the complex formula that has guided kidney allocation for years. A special review group, the Kidney Allocation Review Subcommittee (KARS) chaired by Dr. Stegall, has been reviewing allocation issues and soliciting input from the public for more than a year. Dr. Stegall describes the process and progress made to date by KARS along with possible allocation changes currently under discussion.

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August 16, 2005 **Ethical Dilemmas of Organ Transplantation in the 21<sup>st</sup> Century** — Mark Fox, M.D., Ph.D., Oklahoma Bioethics Center, University of Oklahoma College of Medicine, Tulsa, OK

With the advent of reality TV, the internet, and organ donor web sites, the 21<sup>st</sup> century promises to present a new array of ethical questions for the transplant community. This lecture discusses issues related to the process of organ procurement, distribution, and transplantations.

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September 20, 2005 **OPTN/UNOS** — Walter Graham, Executive Director United Network for Organ Sharing, Richmond, VA

From this lecture, participants will learn how the 1984 passing of the National Organ Transplant Act resulted in the establishment of the Organ Procurement and Transplant Network operated by UNOS. Participants will learn how the OPTN/UNOS functions and is governed as well as how they can become involved.

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June 6, 2006 **The Organ Transplant Breakthrough Collaborative** — Virginia McBride, R.N., M.P.H., C.P.T.C., Department of Health and Human Services, Health Resources and Services Administration, Bethesda, MD

From this lecture, participants will learn about a HRSA initiative, the Organ Transplantation Breakthrough Collaborative, which is focused on increasing organ utilization. Specifically, the collaborative's aim is to increase the mean number of recipients transplanted per donor from 3.06 to 3.75 or higher. HLA laboratories are being encouraged to get involved and participants will learn how they can help.

## ***Set 14***                      ***Flowcytometry and Solid Phase Assays***

April 14, 1999 **How to Optimize and Interpret Flowcytometric PRA Assays** — Robert Bray, Ph.D., Emory University, Atlanta, GA; Howard Gebel, Ph.D., Louisiana State University, Shreveport, LA

Learn how to optimize and interpret Flow PRA's.

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February 20, 2002 **Luminex: An Innovative New Technology that Tests Multiple Analytes in a Single Reaction** James Jacobson, Ph.D., Luminex Corporation, Austin, TX

Learn about the Luminex technology that uses color-coded microspheres and reporter molecules for a variety of applications including SSO-based HLA typing, antibody detection, SNP typing and more.

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July 24, 2002 **Histocompatibility Testing For Solid Organ Transplantation: Is it Still Important?** — Howard Gebel, Ph.D., Emory University, Atlanta, GA

Learn about the pros and cons of the current debates concerning the importance of HLA matching and histocompatibility testing in organ transplantation.

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May 18, 2004 **Implementing, Optimizing and Troubleshooting the ELISA Crossmatch** — Patrick Adams, M.S., C.H.S., Ohio State University Hospital, Columbus, OH

This lecture discusses the principle of how the ELISA crossmatch works as well as how to implement and optimize this assay for use in the histocompatibility laboratory. As more and more laboratories introduce solid phase assays into their routine test repertoires, there is a growing interest in and need for an ELISA-based crossmatch. This conference addresses the pros and cons of the methodology. It helps participants decide if it is right for their laboratory and if it meets the needs of their transplant program.

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## ***Set 15***                      ***Topics for the Molecular Laboratory***

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August 1, 2006 **DNA Extraction from A to Z** — Sandra Rosen-Bronson, Ph.D., Georgetown University Hospital, Washington, DC; Denise Heaney, Emory University Hospital, Atlanta, GA

From this basic lecture, participants will learn about the principles behind different methods of DNA extraction. Quality control and troubleshooting issues are discussed along with options for automation.

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June 22, 2004 **Haplotype-Specific Extraction (HSE): An Innovative New Technology** — Johannes Dapprich, Ph.D., Generation Biotech, LLC, Lawrenceville, NJ; Nancy Murphy, B.A., GenoVision, Inc., West Chester, PA

This lecture discusses an innovative new technology developed by Dr. Dapprich. Haplotype-Specific Extraction, HSE, was designed to physically separate a diploid sample into its haploid components which can then be separately analyzed by standard DNA typing methods currently used on diploid DNA.

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September 26, 2006 **Sequence-Based Typing** — William Hildebrand, Ph.D. and Steven Cate, University of Oklahoma Health Sciences Center, Oklahoma City, OK

This lecture provides a practical overview of how SBT can be efficiently used for high resolution HLA typing in a clinical laboratory. Participants will learn about innovative interpretation-software and get tips for troubleshooting difficult samples.

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July 18, 2006 **Real Time PCR** — Mary Span, M.Sc., Cyclertest, B.V., Landgraaf, The Netherlands

Real time PCR is commonly used in the research setting and is also becoming routine in the clinical laboratory. This basic lecture describes the concepts and theory utilized in these assays and discusses practical issues of assay development, quality control, and troubleshooting.

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## ***Set 16***                                      ***Emerging Technologies***

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August 21, 2002 **VNTR, STR, SNP: What Are They? How Are They Useful in Transplantation and Immunogenetics?** — Sandra Rosen-Bronson, Ph.D., Georgetown University Hospital, Washington, DC

Learn about these genetic markers and how they are used to monitor engraftment, detect chimerisms and locate disease genes.

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May 22, 2003 **The ELISPOT Assay: What is it? And How Can It Be Useful in Transplantation** — Anat Tambur, D.M.D., Ph.D., Rush Presbyterian St. Luke's Medical Center, Chicago IL

This lecture discusses theory, principal and practical applications for the enzyme-linked immuno-spot ELISPOT assay. This assay first described two decades ago as a useful assay for the detection of specific immune responses on a single cell level is being used more and more as a method for post-transplant monitoring.

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June 15, 2004 **Emerging Molecular Technologies** — Ena Wang, M.D., Department of Transfusion Medicine, NIH Clinical Center, Bethesda, MD

This lecture provides an overview of emerging molecular tools such as real time PCR, microarrays, and pyrosequencing. Participants will learn how these techniques can be useful in the HLA laboratory and how they are used for studying immune responsiveness and developing new immunotherapies.

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November 7, 2006 **An Introduction to Proteomics** — James Baraniuk, M.D., Georgetown University Hospital, Washington, DC

The field of proteomics is developing at a rapid pace in the post-genome era. Proteomics as a noninvasive diagnostic tool has been used most extensively in the field of cancer research but the technologies are increasingly applied to clinical studies in transplantation as well. This lecture discusses what proteomics is and how it is potentially useful for monitoring both hematopoietic stem cell and solid organ transplant patients.

## ***Set 17 Clinical Histocompatibility Testing for Organ Transplantation***

September 4, 2002 **The Clinical Significance of Flowcytometric Crossmatching and Antibody Testing** — Peter Nickerson, M.D., Canadian Blood Services, Winnipeg, Manitoba, Canada

Learn about the continued clinical significance of HLA antibodies detected by flowcytometric methods in the era of modern immunosuppression.

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September 18, 2003 **Pretransplant Antibody Testing for Renal Transplantation** — Howard Gebel, Ph.D., Emory University, Atlanta, GA

This lecture is of general interest to all individuals interested in renal transplantation. Dr. Gebel provides an overview of current data concerning the relevance of HLA antibody testing in renal transplantation and the significance of preformed HLA specific antibody to clinical outcome.

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November 16, 2004 **The Role of Alloantibody in Kidney Transplant Deterioration** — Philip Halloran, M.D., Ph.D., Director, Division of Nephrology and Immunology, University of Alberta, Edmonton, Alberta, Canada

This lecture discusses how the presence of HLA antibody plays a role in tissue damage and overall deterioration of the transplanted organ. Dr. Halloran also discusses assays and novel technologies that will enable detection of allograft dysfunction or rejection, monitor responses to therapy, and predict long-term outcomes.

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March 29, 2005 **Transplanting the Sensitized Patient: Biology versus Pharmacology** — Robert Bray, Ph.D., and Howard Gebel, Ph.D., Emory University Hospital, Atlanta, GA

This lecture discusses the pros and cons of emerging and evolving strategies for transplanting highly sensitized patients.

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**Set 18*****HLA Antibody in Solid Organ Transplantation***

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June 28, 2005 **Mechanisms of Anti-HLA Antibody Mediated Graft Damage** — Elaine Reed, Ph.D.,  
UCLA Immunogenetics Center, Los Angeles, CA

The important role of antibody in mediating organ damage post transplantation is becoming increasingly recognized. This lecture discusses the mechanisms by which the development of HLA antibody post transplant can contribute to the induction of chronic rejections.

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July 12, 2005 **C4d Deposition: An Important Marker of Humoral Rejection** — Susan Saidman, Ph.D., and A. Bernard Collins, Ph.D., Department of Pathology, Massachusetts General Hospital, Boston, MA

From this lecture, participants will learn how the presence of C4d deposition in peritubular capillaries along with circulating anti-donor HLA antibody can be an important diagnostic marker of humoral allograft rejection.

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August 2, 2005 **Future Challenges in Clinical Laboratory Support for Transplantation** — Peter Nickerson, M.D., Canadian Blood Services, Winnipeg, MB, Canada

The histocompatibility laboratory's role has evolved over the years from that of "tissue typers" to that of integral members of the transplant team. Participants will learn how more laboratories are performing sensitive innovative assays that provide information critical to the transplant surgeon's treatment plan for individual patients.

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August 29, 2006 **Calculating the Probability of a Positive Crossmatch** — Robert Bray, Ph.D., and Howard Gebel, Ph.D., Emory University Hospital, Atlanta, GA

Many histocompatibility laboratories are becoming better able to accurately detect and define the HLA specificity of a transplant candidate's antibody through the use of a variety of highly sensitive techniques including solid-phase assays. For this reason, it is now possible to more accurately predict the results of a crossmatch between a transplant candidate and a prospective donor. Participants will learn how such predictions can be made and when and why they may be useful.

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**Set 19*****Immunosuppression***

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June 13, 2001 **Immune Suppression: Behind the Scenes: Part 1** — Robert Bray, Ph.D., Emory University, Atlanta, GA; Howard Gebel, Ph.D., Louisiana State University, Shreveport, LA

Learn about T cell activation pathways and how they are affected by current immunosuppressive agents.

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June 27, 2001 **Immune Suppression: Behind the Scenes: Part 2** — Robert Bray, Ph.D., Emory University, Atlanta, GA; Howard Gebel, Ph.D., Louisiana State University, Shreveport, LA

Learn about T cell activation pathways and how they are affected by current immunosuppressive agents.

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May 10, 2005 **The Pharmacogenetics of Immunosuppression** — Mark Grebenau, M.D., Ph.D.,  
Novartis Pharmaceuticals, East Hanover, NJ

From this lecture, participants will learn how different individuals can have different enzymes that may react differently to combinations of immunosuppressive drugs and other pharmaceuticals. They will hear how understanding such differences can aid in optimizing each transplant patient's treatment.

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June 21, 2005 **Future Challenges in Therapeutic Strategies for Transplantation** — Allan Kirk, M.D., Ph.D.,  
Transplantation Branch, NIDDK, National Institutes of Health, Bethesda, MD

Although modern immune suppression drugs can be very effective at preventing organ rejection, they are at the same time the leading cause of complications following transplantation. This advanced level lecture discusses why the future goal in transplantation is to develop new ways of preventing graft rejection that do not depend heavily on immunosuppressive drugs.

## ***Set 20 Bone Marrow Transplant Viewpoints and Considerations***

August 8, 2001 **Graft Versus Host Disease** — Neal Flomenberg, M.D., Thomas Jefferson University,  
Philadelphia, PA

Learn about graft versus host phenomena, current approaches for treatment and when and how it can be beneficial.

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May 8, 2002 **Ethical Considerations in Hematopoietic Stem Cell Transplantation** — Jeffery Kahn, Ph.D.,  
M.P.H., University of Minnesota Center for Bioethics, Minneapolis, MN

Learn about ethical issues and controversies connected with HSC donation and transplantation.

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March 15, 2005 **BMT Through the Eyes of the Coordinator** — Sherry Rue, M.T., C.H.T.C.,  
National Marrow Donor Program, Minneapolis, MN; Jennifer Wilder, R.N., UCSD Bone Marrow  
Transplant Program, San Diego, CA

This lecture provides participants with a better understanding of the steps and hurdles involved in identifying the best donor for a patient in need of a stem cell transplant. They will learn how efficient teamwork between the transplant center, donor center, and the HLA typing lab can help bring patients to transplant more quickly.

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September 1, 2005 **The Clinical Relevance of Donor Specific HLA Antibody in BMT** — Claudio Anasetti,  
M.D., H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL

As more HLA mismatched stem cell transplants are performed, there is renewed interest in understanding the clinical relevance of donor specific antibody in stem cell transplant patients. This lecture discusses the current data concerning the importance of donor and recipient compatibility to transplant outcome.

## *Current Topics in Histocompatibility and Transplantation*

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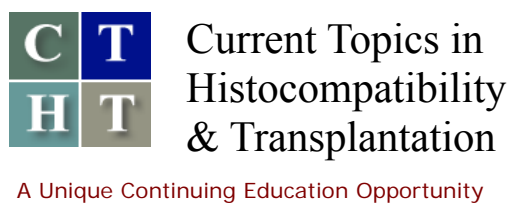
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