Unit Title	Course Name	Authors	Learning Objectives
Dialysis Access	Vascular Access for Hemodialysis: An Update: Part I	Joseph R. Leventhal, MD, PhD	1. Understand the goals of dialysis access 2. Understand the advantages and disadvantages of various types of access 3. Appreciate the advantages and disadvantages of various types of access for a patient depending on their co-morbidities 4. Understand the challenges in providing patients with optimal access 5. Be familiar with the DOCI guidelines for dialysis access
Dialysis Access	Vascular Access for Hemodialysis: An Update: Part II	Joseph R. Leventhal, MD, PhD	1. Understand the considerations and objectives when deciding on type of dialysis access 2. Understand the advantages and disadvantages of various sites and types of dialysis access 3. Understand the general medical considerations: 4. Be familiar with operative site evaluation: 5. Be familiar with potential anesthetic approaches
Dialysis Access	Complications of Vascular Access	Kenneth J. Woodside, MD	1. To describe the diagnosis, evaluation, and management of common vascular access complications 2. To describe the approach and importance of vascular access site conservation and salvage 3. To describe and emphasize the multidisciplinary nature of vascular access use and management
Dialysis Access	Peritoneal Dialysis Catheters	James Whiting, MD	1. Name the 3 components of the peritoneal membrane and outline the pore theory of transperitoneal transport 2. Compare and contrast the approaches for peritoneal catheter placement 3. List the common complications of peritoneal catheter placement and approaches for their treatment.
Ethics	Ethics	Eric Grossman, MD and Peter Angelos, MD, PhD	1. Understand terminology of medical ethics and origins in Western philosophy 2. Describe the historical context of ethical principles in medicine 3. Apply the ethical principles to the practice of transplantation
Ethics	Ethics Surrounding DBD and DCDD Donors	David P. Foley, MD	Recognize and understand the ethical principles surrounding DBD and DCDD 1. Uniform Determination of Death Act 2. Criteria for Brain Death 3. Controlled DCDD Protocols 4. Utilization of donor hearts after DCDD 5. Uncontrolled DCDD protocols
Ethics	Ethics in Living Liver Donation	Anji Wall, MD, PhD	1. Understand donor autonomy and its establishment through informed consent 2. Explain beneficence and non-maleficence as it applies to living liver donation 3. Understand all the required aspects of informed consent. (reference guidelines) 4. Understand the ethical challenges with living donation as it relates to the recipient's condition (e.g pediatric recipient, alcoholic liver disease, HCC)
Hepatopancreatobiliary	Management of Benign Tumors of the Liver	Kelly M. Collins, MD	1. Diagnostic evaluation of liver masses, including incidental and symptomatic masses, and in cirrhotic patients. 2. Diagnostic evaluation of cystic liver lesions. 3. Surgical therapy for benign liver tumors. 4. Liver transplantation for benign liver tumors.
Hepatopancreatobiliary	Resection for HCC	M.B. Majella Doyle , MD, FACS	1. Diagnostic evaluation and treatment selection 2. Liver-directed therapy use, including bridging and downstaging 3. Surgical therapy for HCC 4. Liver transplantation for HCC
Hepatopancreatobiliary	Management of HCC with Liver Transplant	M.B. Majella Doyle , MD, FACS	
Hepatopancreatobiliary	Benign Bile Duct Injury and Strictures	Christopher J. Sonnenday, MD, MHS	1. Evaluation and management of bile duct injury following cholecystectomy. 2. Evaluation and differential diagnosis of established bile duct strictures. 3. Endoscopic and interventional radiology management of biliary fistula(s) and strictures 4. Role of liver transplantation for secondary biliary cirrhosis.
Hepatopancreatobiliary	Metastatic Cancer of the Liver	Parsia A. Vagefi, MD	1. Diagnostic evaluation, staging, and multidisciplinary management of metastatic cancer to the liver. 2. Surgical therapy of metastatic colorectal cancer to the liver. 3. Neoadjuvant, adjuvant, and liver-directed therapies for metastatic colorectal cancer to the liver. 4. Liver Transplantation for metastatic disease (NE tumor, colorectal cancer).
Hepatopancreatobiliary	Management of Cholangiocarcinoma	Shimul A. Shah, MD, MHCM	1. Diagnostic evaluation and treatment selection, for intrahepatic and extrahepatic cholangiocarcinoma 2. Surgical therapy for intrahepatic cholangiocarcinoma (IHCC), including resection and liver transplantation. 3. Surgical therapy for extrahepatic cholangiocarcinoma, including resection and transplantation. 4. Neoadjuvant, adjuvant, and liver-directed therapies for cholangiocarcinoma
Hepatopancreatobiliary	Pediatric Liver Tumors: Hepatoblastoma	Sophoclis P. Alexopoulos, MD, FACS	1. Understand the risk factors associated with hepatoblastoma 2. Be able to describe the PRETEXT staging system for hepatoblastoma 3. Understand the use of neoadjuvant chemotherapy in the treatment of hepatoblastoma 4. Understand the role of surgical resection in hepatoblastoma 5. Know the indications for liver transplantation in hepatoblastoma
Hepatopancreatobiliary	Pancreatitis Management	Marlon F. Levy, MD, FACS	1. Management of acute pancreatitis, including pancreatic necrosis. 2. Management of chronic pancreatitis, including resection and drainage procedures. 3. Role of total pancreatectomy and auto-islet transplantation.
Hepatopancreatobiliary	Management of Gallbladder Cancer	Karim J. Halazun, MD, FACS	1. Evaluation and management of the gallbladder mass/polyp 2. Management of incidental gallbladder carcinoma s/p simple cholecystectomy 3. Surgical therapy of gallbladder carcinoma (radical cholecystectomy) 4. Adjuvant and liver-directed therapies for gallbladder carcinoma
Hepatopancreatobiliary	Choledochal Cyst Management	Kendra D. Conzen, MD, FACS	1. Evaluation and staging of choledochal cysts 2. Workup and surgical management of choledochal cysts 3. Consideration of liver transplantation in patients with choledochal cyst
Hepatopancreatobiliary	Management of Benign Cystic Tumors of the Pancreas	Adeel S. Khan, MD, MPH	1. Evaluation, differential diagnosis, and management of cystic lesions of the pancreas. 2. Endoscopic evaluation and management of pancreatic cystic lesions. 3. Surgical therapy for pancreatic cystic lesions (MCN, IPMN).
Hepatopancreatobiliary	Management of Cirrhosis in Non-Transplant Conditions	Gregory Veillette, MD, FACS	1. Diagnostic evaluation for background liver synthetic condition and presence of portal hypertension. 2. Consideration of liver resection in patients with fibrosis and established cirrhosis. 3. Consideration of general surgical procedures in setting of cirrhosis and portal hypertension (e.g., ruptured umbilical hernia in setting of ascites, colectomy in setting of ascites, etc) 4. Consideration of TIPS as an adjunct to general surgical operative procedures

Immunology/Pharmacology	Basic Transplant Immunobiology: Basic Concepts	Allan Kirk, MD	1. Describe Basic Immunology – adaptive or specific immunity 2. Describe the relationship between antigen presenting cells and cytokines released by cells of the innate immune response 3. Describe the types of antigen presenting cells and the changes that occur following exposure to antigen 4. List the subsets of T cells and describe their function 5. Describe the distribution of MHC Class I and Class I molecules on immune cells and commonly transplanted organs 6. Describe the function of MHC Class I and Class II antigens 7. Define the first, second, and third signals involved in the initiation of an effective antigen specific response
Immunology/Pharmacology	Basic Transplant Immunobiology: Rejection	Allan Kirk, MD	1. Definition of acute and chronic allograft rejection 2. Cellular effector mechanisms of rejection 3. Variables influencing alloreactivity 4. Acellular effector mechanisms of rejection 5. Variables influencing alloantibody reactivity 6. Overview of complement activation 7. Mediators of intracellular communication 8. Co-stimulator molecules
Immunology/Pharmacology	Major Histocompatibility Complex Part I: Structure and Function of HLA	Kelley M.K. Hitchman, MS, PhD, F(ACHI)	1. List key genes of the Major Histocompatibility Complex (MHC) encoding for HLA molecules and describe MHC inheritance. 2. Summarize MHC and HLA polymorphism, HLA molecule expression and HLA molecule functions. 3. Appraise the role of HLA molecules and peptides in transplantation. 4. Describe test methods utilized by clinical histocompatibility & immunogenetics laboratories for the purposes of HLA typing and anti-HLA antibody detection/identification, as well as the clinical applications of such HLA data.
Immunology/Pharmacology	Major Histocompatibility Complex Part II: Clinical significance of anti-HLA antibodies in transplantation	Kelley M.K. Hitchman, MS, PhD, F(ACHI)	1. Review the history and evolution of diagnostic criteria for antibody mediated rejection (AMR) 2. Describe mechanisms in which mismatched donor HLA antigens can cause and contribute to AMR 3. Explain the components and process of performing a virtual crossmatch, as well as how it is applied as a specialized immunologic risk assessment for transplant pairs. 4. Summarize different timings and manifestations of AMR 5. Understand how HLA-DSA detection can correlate with rejection and how anti-HLA antibody testing can help inform desensitization.
Immunology/Pharmacology	Immunobiology of Transplantation	Sang-Mo Kang, MD	1. Define basic transplant immunology terminology 2. Describe how alloantigens are presented and recognized by the host immune system 3. Describe the host immune response to alloantigens
Immunology/Pharmacology	Basic Mechanisms of Tolerance	Satish Nadig, MD, PhD	1. What is tolerance? 2. Types of tolerance 3. Review central and peripheral tolerance 4. Overview of T cell activation and cellular targets to achieve tolerance 5. Review the possible Mechanisms to achieve tolerance 6. Summary of strategies to achieve tolerance and future directions
Immunology/Pharmacology	Pathological Analysis of Acute and Chronic Kidney Allograft Injury	Michael Mengel, MD	1. To review the pathomechanisms of acute and chronic kidney allograft injury 2. To understand the Banff classification system for diagnosing acute and chronic kidney allograft injury 3. To highlight the limitations of the current Banff classification system 4. To discuss future developments to increase diagnostics precision in acute and chronic kidney allograft injury
Immunology/Pharmacology	Pancreas Transplant Pathology Allograft Rejection	Cinthia Drachenberg, MD	1. Understand the different mechanisms leading to graft failure 2. Recognize the long-term impact of rejection for the organ 3. Discuss the main histological and physiopathological aspects of islet dysfunction.
Immunology/Pharmacology	Immunosuppressive Medications in Abdominal Organ Transplantation	Oya M. Andacoglu, MD	1. Understand the general classes/groups of agents and mechanism of action 2. Appreciate the concern, possible mechanism and unintended side effects 3. Identify CNI minimization and CNI free protocols as viable alternatives with focus updated data on benefits and risk compared to CNI based immunosuppression
Intestinal Transplantation	Intestinal Transplantation: Evaluating a Potential Candidate	Shaheed Merani, MD, PhD, FRCSC, FACS	1. Deciding on when to list a patient for intestinal transplant 2. Classical indications for listing for intestinal transplant 3. How listing patients for intestinal transplant has changed with time 4. Outline of additional workup required
Intestinal Transplantation	Intestinal Transplantation: Recipient Operations	Shaheed Merani, MD, PhD, FRCSC, FACS	1. Differentiate between the anatomical configurations and surgical components of isolated intestinal, combined liver-intestinal, and multivisceral transplants. 2. Evaluate clinical indications and patient-specific factors (e.g., severity of IFALD, vascular patency) to determine the most appropriate graft type. 3. Describe the critical technical steps of the recipient operation, with a focus on vascular inflow/outflow strategies and the restoration of enteric continuity. 4. Formulate management strategies for complex surgical challenges.
Kidney Transplantation	Chronic Kidney Allograft Rejection	William Kitchens, MD, PhD, FACS, FAST	1. Discuss the causes of long-term allograft failure 2. Investigate the pathophysiologic mechanisms of kidney allograft chronic fibrosis 3. Identify the different kinds of chronic kidney rejection (including chronic active T-cell mediated rejection and chronic active antibody-mediated rejection), and how they are diagnosed 4. Evaluate different treatment modalities of chronic kidney rejection
Kidney Transplantation	End Stage Renal Disease and the Renal Transplant Evaluation	Monica Grafals, MD	1. Identify the most common diseases that cause ESRD 2. Know the rates of recurrence of these diseases in the transplanted kidney 3. Understand the impact of renal transplantation in these diseases 4. Evaluate patients for renal transplantation.
Kidney Transplantation	Obesity in Kidney Transplantation	Daniel Zamora-Valdes, MD, MSc, FACS	To define obesity and its impact on: 1. Kidney disease 2. Kidney donation 3. Kidney transplant candidates To outline treatment options for obese kidney transplant candidates: 1. Before transplantation 2. During transplantation 3. After transplantation
Kidney Transplantation	Pre-transplant Evaluation of the Kidney and/or Pancreas Recipient	David Lee, MD	
Kidney Transplantation	Kidney Donor Profile Index	Patrick G. Dean, MD	1. Describe the Kidney Donor Profile Index (KDPI) 2. Define the Expected Post-Transplant Survival (EPTS) score 3. General discussion of KDPI, EPTS, PRA, and other factors are used for kidney allocation. 4. Special circumstances in kidney allocation (previous living donors, PRA 98-100%, 0-mismatch, and emergency exceptions)

Kidney Transplantation	Evaluation of the Potential Living Kidney Donor	Elizabeth M. Thomas, DO	1. Understand the benefits of living kidney donor transplantation 2. Appreciate the risks of living kidney donor nephrectomy to the donor 3. Appreciate the components and importance of the OPTN policy for living kidney donor evaluation 4. Understand that there are dilemmas in living kidney donation and the acceptance criteria for living kidney donors continues to evolve.
Kidney Transplantation	Kidney Preparation for Transplantation	Alexandra P. Turner, MD	1. Safe preparation of renal allograft for transplantation 2. Anatomic pitfalls (procurement and patient related) and solutions 3. Back table reconstruction techniques 4. Placing kidney on machine pulsatile perfusion
Kidney Transplantation	Kidney Transplantation: Surgical Complications	Sanjay Kulkarni, MD FACS	
Kidney Transplantation	Kidney Transplantation: Surgical Procedures	Sanjay Kulkarni, MD FACS	
Kidney Transplantation	Delayed Graft Function DGF	Sameh Adel Fayek, MD, PhD	1. Defining DGF 2. Pathophysiology of DGF 3. Diagnosis of DGF 4. Implications of DGF 5. Current and future approaches prevent and treat to DGF
Kidney Transplantation	Allograft Nephrectomy	William Kitchens, MD, PhD, FACS, FAST	1. Know the indications for early and delayed/late transplant nephrectomy. 2. Understand the risks and benefits of a transplant nephrectomy. 3. Know the basic steps in performing a transplant nephrectomy.
Kidney Transplantation	Desensitization in Kidney Transplantation	Mark J. Stegall, MD	1. Understand the definition of a sensitized patient 2. Understand the need for desensitization in the current era 3. Understand the current clinical trials for desensitization
Kidney Transplantation	Evaluation of Post-Transplant Renal Dysfunction	John J. Friedewald, MD	1. Define acute kidney injury and a generalized approach to its evaluation 2. Understand prerenal causes of renal dysfunction 3. Understand intrinsic causes of renal dysfunction 4. Understand postrenal causes of renal dysfunction
Kidney Transplantation	Kidney Transplant Outcomes	Randall S. Sung, MD	1. To understand outcome differences between living donors and subtypes of deceased donors 2. Understand risk and benefits of transplanting kidneys from high KDPI donors 3. Understand impact of recipient factors on outcomes 4. Understand impact of donor factors on outcomes 5. Understand risk and benefits of high KDPI kidneys
Kidney Transplantation	Long Term Kidney Transplant Outcomes and Chronic Graft Loss	Min Yoo, MD	1. To appreciate approximate long-term kidney graft survival length of time. 2. To know the common causes of long-term graft failure. 3. To recognized common histologic features of chronic graft failure. 4. To recognize the predictors of long-term graft survival.
Kidney Transplantation	Diagnosis of Rejection and Treatment of ACR and AMR in Kidney	John J. Friedewald, MD	1. Understand the differences between types and timing of rejection 2. Be able to describe the mechanism of action of different therapies used to treat rejection 3. Become familiar with novel biomarkers for the diagnosis of acute rejection
Liver Transplantation	Liver Transplantation: The Pre-Evaluation	Jonathan Fryer, MD	
Liver Transplantation	Liver Transplantation : The Pre-Evaluation: Part II	Jonathan Fryer, MD	
Liver Transplantation	Donor Options for Pediatric Liver Transplantation: Evaluation and Management: Part I	Kim M. Olthoff, MD	
Liver Transplantation	Donor Options for Pediatric Liver Transplantation: Evaluation and Management: Part II	Kim M. Olthoff, MD	
Liver Transplantation	Liver Implantation Techniques: Common Pitfalls and How to Navigate Them	Sunil K. Geevarghese, MD, MSCI, FACS	1. Enhance recognition of aberrant hepatic arteries during procurement and understanding of various arterial reconstruction options 2. Review the pitfalls of procuring arterial and venous conduit 3. Describe the differences in the recipient hepatectomy for bicaval and piggyback orthotopic liver transplants 4. Understand indications for and steps of placing a patient on venovenous bypass 5. Manage intraoperative challenges with reperfusion including hemorrhage 6. Recognize the difficult hepatic artery anastomosis and means to handle it 7. Navigate donor-recipient bile duct size mismatch
Liver Transplantation	Alcohol Liver Disease and Liver Transplantation	Cary Caldwell, MD	1. Describe the incidence, mechanisms and manifestations of Alcoholic Liver Disease 2. Describe the selection process for ESLD patients with ALD 3. Describe the stratagems of Transplant Centers in dealing with ALD patients 4. Describe the results of OLT in ALD patients
Liver Transplantation	Management of Complications of End Stage Liver Disease (ESLD)	Kawtar Al Khalloufi, MD	1. To understand the differences between compensated and decompensated liver disease 2. To discuss the CPT versus MELD scoring systems as a classification of degree of liver disease 3. To describe the pathophysiology, diagnosis, and management of major complications of ESLD including ascites, spontaneous bacterial peritonitis, hepatorenal syndrome, hepatic encephalopathy, and variceal hemorrhage.
Liver Transplantation	Acute Liver Failure	Sameh Adel Fayek, MD, PhD	1. Define acute on top of chronic liver failure (ACLF) 2. Impact of ACLF/scoring systems (CLIF-SOFA scoring) Survival / mortality risk in ACLF Prevalence of ACLF among inhouse liver patients with cirrhosis Financial burden of ACLF 3. Pathophysiology and clinical presentation of ACLF Predisposing factors: (acute liver injury on top of chronic, extrahepatic process "bleed – infection", un identified) Predisposition: (Genetic, Gut/ microbiotia, infection) Pathophysiology (SIRS, infection, MOF) 4. Management? Medial management – role of liver support systems Prognostic criteria for survival To transplant or not ---Futile Transplant Role of LDLT
Liver Transplantation	PSC and PBC	Gregory Gores, MD	
Liver Transplantation	MASH: The Under-Appreciated Comorbidity	Babak J. Orandi, MD, PhDMSc, FACS	1. Define and diagnose MASH using current nomenclature — Explain the rationale behind the shift from NAFLD/NASH to MASLD/MASH terminology, and apply the cardiometabolic criteria–based diagnostic algorithm (including exclusion of other causes of steatosis) to identify patients with MASH. 2. Describe the epidemiologic burden and natural history of MASH — Summarize projected US and global trends in MASLD/MASH prevalence through 2050, recognize that disease stage is not fixed (progression and regression both occur), and identify high-risk populations warranting screening, including lean patients. 3. Select an evidence-based management strategy for MASH — Compare the efficacy and safety profiles of lifestyle intervention, bariatric surgery, and pharmacotherapy (vitamin E, pioglitazone, aspirin, resmetirom, and incretin-based agents) to guide treatment selection based on fibrosis stage and patient comorbidities.

Liver Transplantation	Budd-Chiari Syndrome	Jonathan Fryer, MD	1. Define and review the potential causes of Budd-Chiari Syndrome 2. Understand the diagnostic pathway for Budd-Chiari Syndrome 3. Discuss the management of Budd-Chiari Syndrome
Liver Transplantation	Hepatocellular Carcinoma: Epidemiology, Diagnosis, and Staging	David A. Axelrod, MD, MBA and Abhinav Seth, MBBS	1. Understand the evolving epidemiology of HCC in the US 2. Understand which populations should be screened for HCC and which studies should be used 3. Understand diagnostic criteria for HCC
Liver Transplantation	Hepatocellular Carcinoma: Treatment Options	David A. Axelrod, MD, MBA	1. Describe minimally invasive treatment options and indications for transarterial chemoembolization (TACE), radiofrequency ablation (RFA), trans arterial radioembolization (TARE), and stereotactic radiation. 2. Describe patients who may be candidates for resection of HCC based on anatomy and underlying liver reserve 3. Describe the Milan and UCSF criteria used for transplant candidacy and the role of downstaging 4. Describe the MELD exception process for transplant candidates with HCC 5. Discuss adjuvant therapies for HCC 6. Understand the BCLC treatment algorithm
Liver Transplantation	Acute Rejection of the Liver Allograft: Clinical, Laboratory and Histologic Presentation	Richa Jain, MD	
Liver Transplantation	Long Term Management of the Liver Transplant Recipient	Justin Boike, MD, MPH	1. Trends and Disease Recurrence in Liver Transplant Recipients 2. Malignancy Risk and Mitigation after Transplant 3. Renal Disease after Liver Transplant 4. Metabolic Complications Associated with Transplant 5. Routine Health Maintenance
Liver Transplantation	Liver Offers: Factors Influencing Your Decision	Elizabeth Pomfret, MD, PhD and Megan Adams, MD	1. How should consent be approached with regard to liver transplantation and organs with special considerations? 2. Understand donor specific concerns with regard to management and outcomes 3. Understand what resources are available to assist with organ evaluation and decision making
Liver Transplantation	Adult Recipient Outcomes after Live Donor Liver Transplantation	John P. Roberts, MD	1. Appreciate the overall benefit of live donor liver transplantation (LDLT) as compared to deceased donor transplantation and waiting list risk 2. Understand factors associated with improved LDLT outcomes 3. Profile of complications is LDLT setting versus deceased donor liver transplants 4. Unique complications and concerns with living donor liver transplantation: Small for size, HCV, HCC 5. Financial implications of LDLT
Liver Transplantation	Adult Living Donor Liver Transplantation: Donor Outcomes Part I	Ravi Mohanka MD, MS, DNB, MSc, MBA and Amay Banker MBBS, MS	1. Learn living liver donor outcomes: mortality, morbidity and quality of life
Liver Transplantation	Adult Living Donor Liver Transplantation: Donor Outcomes Part II	Ravi Mohanka MD, MS, DNB, MSc, MBA and Amay Banker MBBS, MS	1. Learn living liver donor outcomes: mortality, morbidity and quality of life
Liver Transplantation	DCD Liver Transplant Outcomes	Christopher B. Hughes, MD	1. To review the history and laws related to DCD transplantation 2. To describe the proposed mechanisms and risk factors for ischemic cholangiopathy 3. To describe the spectrum of potential manifestation of ischemic cholangiopathy 4. To discuss possible donor and recipient techniques to reduce the risk of ischemic cholangiopathy
Liver Transplantation	Living Donor Allograft Reconstruction	Koji Hashimoto, MD, PhD	1. To understand indications for back table reconstruction in each type of living donor grafts. 2. To review surgical techniques of back table reconstruction. 3. To understand the beneficial effects of back table reconstruction.
Liver Transplantation	Pulmonary Contraindications To Liver Transplant	M. Susan Mandell, MD, PhD	1. To know which diseases lead to both liver and lung disease 2. To understand that lung disease can affect the lung tissue, pleura and/or pulmonary vascular system 3. To learn about the natural history of each lung disease 4. To know how functional reserve is measured for each type of lung disease 5. To recognize when lung disease is a contraindication to liver transplantation
Liver Transplantation	Living Donor Liver Transplantation: Recipient Operation and Outcomes	Koji Hashimoto, MD, PhD	1. Understand the concept of functional graft size in liver transplantation using a partial graft 2. Understand the importance of graft inflow and outflow in LDLT 3. Review surgical techniques of recipient operation (left lobe vs. right lobe) 4. Understand the short- and long-term outcomes after adult LDLT.
Liver Transplantation	Evaluation and Selection of the Living Liver Donor	Lawrence Lau, MBBS, PhD	1. Understand the principles guiding the assessment of living liver donation 2. Understand the aims of donor evaluation 3. Understand the assessment process including initial screening, diagnostic tests and consultations with various team members 4. Understand the selection and exclusion criteria of candidates for living liver donation
Liver Transplantation	Alcoholic Hepatitis	John Rice, MD	
Liver Transplantation	Normothermic Machine Perfusion of the Liver	Garrett Roll, MD, FACS	1. How does advanced preservation influence outcomes 2. Understand the different types of advanced preservation, focusing on NMP 3. Results from the landmark clinical trials, and understand why they need to be interpreted in context 4. Results from emerging post approval, real-world data 5. Consider our biggest challenges
Medical Complications of Transplantation	Pregnancy Outcomes After Transplantation	Lisa A. Coscia, RN, BSN, CCTC	1. What is the TPRI 2. Describe maternal conditions that can complicate pregnancies and their incidence in various organ transplant recipients. 3. Describe newborn potential outcomes/complications and their incidence in various organ transplant recipients. 4. Know the risks of immunosuppressive medications to the fetus. 5. What are the AST consensus guidelines on the timing of planned pregnancies
Medical Complications of Transplantation	Post Transplant Malignancy & Post-transplant Lymphoproliferative Disorders	Ryan A. Helmick, MD	1. To understand the basic immunologic principles that place transplant recipients at greater risk of cancer after transplant 2. To review the increased risks of specific cancers and cancer rates within specific transplant populations 3. To outline principles of post-transplant cancer surveillance and recommendations for surveillance 4. To discuss the etiology and management of Post-Transplant Lymphoproliferative Disorder
Medical Complications of Transplantation	Skin Cancer in Organ Transplant Recipients: Challenges and Opportunities	Clark C. Otley, MD	1. Recognize the appearance of the three most common types of skin cancer 2. Understand the epidemiology and impact of immunosuppression on skin cancer incidence 3. Be able to educate patients on risk factors, prevention, and treatments for skin cancers 4. Understand the role of immunosuppression in the development of skin cancer (the section on the amount and varieties) 5. Recognize the incidence of skin cancer is affected by the type of transplanted organ 6. Understand the significance of actinic keratosis - that it requires aggressive treatment

Medical Complications of Transplantation	Central Nervous System Infections: Part I- CNS Infection Syndromes	Valentina Stosor, MD	1. Review the common infectious CNS syndromes in transplant recipients 2. Outline the diagnostic approach when CNS infection is suspected 3. Understand the differential diagnosis for infectious and non-infectious CNS disorders following transplantation
Medical Complications of Transplantation	Central Nervous System Infections: Part II- Pathogens	Valentina Stosor, MD	1. Review common pathogens encountered in posttransplant CNS infections 2. Define the clinical presentation, diagnostic features, therapies, and prognosis of the common CNS infections
Medical Complications of Transplantation	Donor Transmitted Infections	Michael G. Ison, MD, MS	1. Identify the behavioral and medical risk factors that qualify a donor as "increased-risk of disease transmission." 2. Describe the sensitivity of NAT testing for HIV, HBV, HCV and quantitate the risk of transmission of new infection in the setting "window-period" negative test results.
Medical Complications of Transplantation	Donor-Transmitted Malignancy	Jason Vanatta, MD	1. Understand the risk for donor-transmitted malignancies to potential recipients. 2. Develop an approach to guide decisions regarding a particular donor and to frame the discussion with potential recipients 3. Recognize the options for treatment in the event that a transmission event is encountered 4. Understand the regulatory requirements for an identified event
Medical Complications of Transplantation	Infections in Immunocompromised Hosts	Jeffrey Tessier, MD, FACP, FIDSA	1. Identify typical opportunistic infections associated with transplantation 2. Explain the time points post-transplantation certain types of opportunistic infections are usually observed 3. State the management of immunosuppression for a transplant patient with an opportunistic infections 4. Define the association between CMV infection, acute rejection, and long-term graft outcomes
Medical Complications of Transplantation	BK Virus and Nephropathy	Michael G. Ison, MD, MS	1. Background: understand what is BK virus, prevalence, viral reactivation 2. Appreciate the clinical significance of BK after kidney transplantation (prevalence, course, manifestations and effect on graft survival) 3. Algorithm for surveillance, diagnosis and stages of BK infection and BK nephritis 4. Treatment options 5. Retransplantation in patients with graft loss due to BK nephropathy
Medical Complications of Transplantation	Herpes Viruses after Solid Organ Transplantation	Eva A. Piessens, MD, MPH	1. Understand the risk factors, prophylactic and treatment strategies, and post transplant manifestations of CMV reactivation and disease. 2. Understand the risk factors, prophylactic and treatment strategies, and post transplant manifestations of EBV as it is associated with PTLD. 3. Understand the impact of the other Herpes viruses including HSV1 and 2, Varicella zoster virus, HHV-6, HHV-7, and HHV-9.
Medical Complications of Transplantation	Prophylaxis and Treatment of Post-Transplant Hepatitis B	Kevin Gregg, MD and Zoe Raglow, MD	1. Demonstrate ability to interpret hepatitis B virus serologies and molecular testing to inform post-transplant clinical care 2. Understand the risks of hepatitis B virus transmission from seropositive donors and strategies for prevention of disease transmission 3. Understand the preventive and treatment strategies for hepatitis B infection in liver transplant recipients with known infection
Medical Complications of Transplantation	Implication of Transplantation on Patient Finances and Insurance Coverage	Colleen Satarino, LMSW	1. Review the psychosocial assessment as defined in the Center for Medicare and Medicaid Services (CMS) conditions of participation 2. Consider the impact of social determinants of health regarding access to medical care and transplantation 3. Review the financial aspects of transplant for the patient 4. Discuss cases to describe the process for addressing the psychosocial and financial aspects of pre and post transplant care.
Organ Recovery	Medical Management of Brain Dead Donors	Colleen Jay, MD, MSCI, FACS	1. Review the pathophysiology and consequences of brain death. 2. Provide updated evidence-based guidelines for medical management of potential donors. 3. Touch on organ donor evaluation and allocation considerations. 4. Understand the pathophysiology of ischemia reperfusion injury and review the basics of common preservation fluids.
Organ Recovery	Abdominal Organ Recovery from Deceased Donors	David Ryan Hall, MD	1. Understand preoperative preparation for organ recovery 2. Describe the technique of the operation and specific considerations for procuring each organ 3. Learn where you can get in trouble and how to stay/get out of it
Organ Recovery	Donation after Cardiac Death	David P. Al-Adra, MD, PhD	1. Recognize donation after cardiac death (DCD) donors are a source of transplantable organs 2. Appreciate the outcomes for DCD kidney and liver transplants are improving 3. Understand the multiple potential mechanisms of graft failure after DCD liver transplantation 4. Be aware of how donor-recipient matching may decrease biliary complications and improve graft survival.
Organ Recovery	Donation After Circulatory Death: Abdominal Organ Procurement	Mark Hobeika, MD	1. Recognize the growth of donation after circulatory death in the U.S. and increasing opportunities for extra-renal organ utilization. 2. Explain the principles of organ donation after circulatory death. 3. Describe the recovery factors impacting the outcomes of organs recovered from donation after circulatory death donors
Pancreas Transplantation	Pancreas Transplant Evaluation	Daniel A. Katz, MD	1. Understand indications and contraindications for pancreas transplant 2. Understand how to think about candidate selection in the context of potential risks and benefits 3. Consider the key parts of the surgical portion of the evaluation for pancreas transplant
Pancreas Transplantation	Impact of Pancreas Transplantation on Quality of Life	Seth J. Karp, MD	1. Examine the effect of a successful pancreas transplant of each of these complications 2. Examine the consequences of a failed pancreas transplant.
Pancreas Transplantation	Pancreas Transplantation: The Outcomes and Survival Benefits- Part I	Mark L. Sturdevant, M.D.	1. Describe the Graft and Patient Outcomes of SPK, PTA, and PAK 2. Describe the factors associated with Early Graft Failure 3. Describe the strategies to improve Pancreas transplant
Pancreas Transplantation	Pancreas Transplantation: The Outcomes and Survival Benefits- Part II	Mark L. Sturdevant, M.D.	1. Describe the level of evidence on the long-term benefits of Pancreas Transplant 2. Discuss in detail the specific effects on retinopathy, neuropathy and macrovascular 3. Describe alternative treatments for Type 1 DM and selective type 2 DM
Pancreas Transplantation	Indications and Technique for Graft Pancreatectomy and Pancreas Retransplantation	Ty B. Dunn, MD	1. Indication and timing of graft pancreatectomy 2. Indications and outcomes of pancreas re-transplants 3. Technical tips for re-transplantation of the pancreas 4. Be familiar with the technical challenges and principles of graft pancreatectomy

Pancreas Transplantation	Current Transplant Options for Type I Diabetes	James Shapiro, MD, PhD, FRSC	1. Understand the relative potential benefits of pancreas vs islet transplant 2. Appropriately assign patients for consideration of pancreas vs islet transplant 3. Understand that both treatments currently require full dose immune suppression to prevent allograft rejection (or recurrence of T1D autoimmunity) 4. Describe short and long term outcomes with patient and graft survival in whole pancreas transplantation, and that metabolically endocrine function currently remains superior with a whole graft 5. Describe the technical implantation technique for pancreas (Y-graft, systemic venous drainage, enteric exocrine drainage), vs intraportal non-surgical percutaneous transhepatic access for islet transplantation 6. Describe recent research progress with stem cell derived islets could one day provide successful transplants with less (or no) immune suppression
Pancreas Transplantation	Pancreas Donor Selection	Nitin Katariya, MD, FACS	1. Discuss how to get to a successful pancreas transplant based on donor and recipient matching 2. Emphasize why selection matters 3. Understand the donor data and risk 4. Review imaging and pancreas qualities 5. Assess anatomy, logistics, and decisions
Pancreas Transplantation	Surgical Technique of Pancreas Recovery	Clark D. Kensinger, MD	1. Pre-procurement communication 2. Steps of the donor pancreatectomy 3. Navigating a replaced right hepatic artery during pancreas procurement 4. Assessing and communicating quality 5. Avoiding procurement errors 6. Pediatric and DCD pancreas procurement
Pancreas Transplantation	Pancreas Back Table Preparation	Clark D. Kensinger, MD	1. Back table set up and equipment 2. Steps of a pancreas back table 3. Navigating a replaced right hepatic artery
Pancreas Transplantation	Pancreas Transplantation: Exocrine and Venous Drainage	Jonathan A. Fridell, MD	1. Describe the history and evolution of pancreas transplant drainage techniques. 2. Describe advantages, disadvantages, and techniques of pancreas transplant bladder drainage. 3. Describe advantages, disadvantages, and techniques of pancreas transplant enteric drainage.
Pancreas Transplantation	Surgical Complications of Pancreas Transplant	Nitin Katariya, MD, FACS	1. Recognize, diagnose, and manage early surgical complications: Bleeding, wound infection, graft thrombosis, parenchymal leak, enteric leak, graft pancreatitis, AVF, abscess, bowel obstruction 2. Recognize, diagnose, and manage late surgical complications: Hernia, bowel obstruction, arterial pseudoaneurysm, vascular stenosis
Pediatrics	Health Care Transition Following Pediatric Solid Organ Transplantation and Maintaining Adherence	Jennifer Vittorio, MD	1. Define health care transition. 2. Review current outcomes following transfer of care for pediatric solid organ transplant recipients. 3. Identify and discuss barriers to health care transition. 4. Review the "Six Core Elements of Transition."
Pediatrics	Immunosuppression, Rejection, and Tolerance in Pediatric Transplantation	Walter S. Andrews, MD	1. Understand the current usage of Immunosuppression in Pediatric liver and kidney transplantation. 2. Understand what makes immunosuppression management different in children as compared to adults. 3. Understand the approaches to diagnosing and treating acute and chronic rejection. 4. Current understanding and status of Tolerance in Pediatric transplantation.
Pediatrics	Pediatric Organ Allocation: Listing and applying for exception points	Srinath Chinnakotla, MBBS, MCh, FACS	1. Understand the PELD score and Pediatirc allocation system 2. Understand candidate who could receive exception points 3. How to write and exception narrative
Pediatrics	Transplantation for Metabolic Diseases	Alisha Mavis, MD	1. Define metabolic disease 2. Review indications for liver transplant 3. Discuss ethical & surgical considerations 4. Observe outcomes for liver transplantation in metabolic disease 5. Assess the benefits and challenges of liver transplantation for metabolic disease
Pediatrics	Pediatric Kidney Transplantation	Christine Hwang, MD, FACS	1. Understand the patient demographics in pediatric kidney transplant recipients 2. Have an overview of technical aspects in pediatric kidney transplantation 3. Review the outcomes of pediatric patients after kidney transplantation
Public Policy and Organ Allocation	Organ Procurement and Transplant Network (OPTN) and the Transplant Center	Ryan A. Helmick, MD	1. Review the history and formation of the Organ Procurement & Transplant Network (OPTN), as well as its relationship with HRSA and UNOS 2. Identify the functions of the OPTN 3. Discuss how transplant centers relate to the OPTN
Public Policy and Organ Allocation	Scientific Registry of Transplant Recipients	Bertram L. Kasiske, MD	1. Understand the organizational structure of OPTN and SRTR . 2. Understand the services provided by the SRTR and its role in feedback to the transplant center and policy development. 3. Understand the methods by which the OPTN uses Program Specific Reports (PSRs) in transplant center oversight
Public Policy and Organ Allocation	Centers for Medicare Services (CMS) for Accreditation of Hospitals & Oversight of Transplantation	Kenneth Andreoni, MD	1. Addresses the oversight role of the Centers for Medicaid and Medicare Services (CMS) and the Joint Commission (JC) in transplantation (current objective) 2. Outlines the infrastructure of Medicare services and how it applies to transplantation. 3. Outlines the Medicare requirements for conditions of participation by the transplant centers. 4. Addresses the transplant services covered by Medicare 5. MACRA
Access to Transplantation	Viable Diversity: Homogenous Goals + Variant Backgrounds = Improved Outcomes	Thomas Butler, MD, MS, FACS	
Access to Transplantation	Disparities in Donation: Issues and Solutions	Malay B. Shah, MD	
Access to Transplantation	Taking Care of Diverse Patient Populations	Tanjala S. Purnell, PhD, MPH	
Access to Transplantation	Building an African American Transplant Access Program: My Experience	Dinee C. Simpson, MD	
Access to Transplantation	Advancing Equity in Transplantation: What is the Fellow's Role?	Lee S. Cummings, MD	