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OFFICE

McGovern Medical School/UT Health
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EDUCATION:

Augusta High School

1011 Main Street, Augusta, AR 72006
Degree Obtained May 1999

University of Arkansas at Pine Bluff

1200 N. University Dr., Pine Bluff, AR 71601
Degree Obtained May 2003, B.S. Biology

University of Central Arkansas

201 Donaghey, Conway, AR 72035-5003
Degree Obtained December 2007, M.S. Biology
Thesis Title: Characterization of Large Plasmids in Multi-Drug Resistant Strains of *Salmonella* Newport Isolates from Food Animals

University of Arkansas for Medical Sciences

4301 W. Markham, Little Rock, AR 72205
Degree Obtained May 2013, M.S. Interdisciplinary Biomedical Sciences
Thesis Title: Optimization of Living Donation in Anti-HLA Sensitized Patients Utilizing Paired Kidney Donation & HLAMatchmaker

University of Arkansas for Medical Sciences

4301 W. Markham, Little Rock, AR 72205
Degree Obtained December 2015, Doctorate of Philosophy in Interdisciplinary Biomedical Sciences
Dissertation Title: The Role of Anti-HLA Antibodies in Humoral Rejection

HONORS/AWARDS:

Certified Histocompatibility Diplomate (ABHI)
Certified Histocompatibility Specialist (ABHI)
Certified Histocompatibility Technologist (ABHI)
American Society of Histocompatibility & Immunogenetics Member
American Society of Histocompatibility Inspector
National Center of Toxicological Research Outstanding Research Award
2002

WORKEXPERIENCE:

UT Health McGovern Medical School/Memorial Hermann

June 2020 – current

Assistant Professor, Department of Surgery

Assistant Director, Histocompatibility and Immune Evaluation Laboratory

Duties: Responsible for the overall operation and administration of the laboratory including technical and scientific oversight of the laboratory; employment of competent personnel; accurately, promptly and proficiently report test results; and assure laboratory's compliance with all applicable regulations. Ensure testing methodologies selected provide accurateness for all aspects of test performance during the pre-analytical, analytical and post-analytical phases of testing. Advise physicians and other relevant personnel concerning laboratory results. The Director will also answer technical and clinical questions from technical and medical staff and provide consultation to the customers. Responsible for validation and implementation of new molecular testing methodologies. Implementation of policies and procedures to establish training and monitoring of laboratory personnel to ensure accurate and reliable test results. Establish and manage quality control and quality assessment programs. Develop costs and manage operating budget.

DCI Transplant Immunology Laboratory

July 2017 – May 2020

Director-In-Training

Duties: Design and participate in the implementation of new assays and improvement of current assays. Prepare SOPs, lab development notebooks and validations independently. Serve as technical resource for the lab. Oversee the development and execution of test validation plans. Provide training and technical support. Assure regulatory compliance. Work with Laboratory Manager, Supervisors and Director. Perform evaluation of new test methods. Review and approve clinical test results as delegated by the Director. Assist with quality and process improvements. Provide assistance to clients.

University of Arkansas for Medical Sciences

January 2006 – July 2017

Certified Histocompatibility Specialist/Supervisor

Duties: HLA Laboratory: Supervise daily activities related to HLA lab. Superuser and trainer of the use and implementation of internal computer system for HLA and Pathology department. Analyze test results for patient reports. Implement and adhere to United Network for Organ Sharing (UNOS) guidelines, American Society for Histocompatibility & Immunogenetics (ASHI) guidelines for kidney allocation in the AR renal transplant programs. Assist kidney transplant centers with the management and kidney allocation of patients on United Network for Organ Sharing list in UNET electronic records. Enter and monitor transplant data in UNET electronic system. Enter and monitor National Marrow Donor Program data for all bone marrow and stem cell transplant patients currently awaiting allogeneic stem cell transplants. Enter and monitor

Cord Blood Bank donors records into Cord Blood Bank of Arkansas donor registry. Train new technologists and provide assistance in all areas of the HLA lab. Perform tissue typing for solid organ and bone marrow transplantation, complement dependent cytotoxicity, panel reactivity antibody, Flow cytometry, flow crossmatches, SSP, SSO, RSSO and quality control. Perform research related to acute kidney rejection, perform article reviews, explore and implement new technologies, write and submit research articles and grant submissions.

RESEARCH

Evaluation of HLA Alloantibody Formation in Pediatric Patients Supported with the Berlin Heart Excor Ventricular Assist Device; 2013-2014

Optimization of Living Donation in Anti-HLA Sensitized Patients Utilizing Paired Kidney Donation and HLAMatchmaker; 2011-2013

Identification of HLA Antibodies Using C1q and IBeads in Renal Transplantation; 2013-2014

The Role of Anti-HLA Antibodies in Humoral Rejection; 2013-2015

De-identified HLA typing in ASD and non-ASD cell lines; 2016-current

Comparison between Fluorescence cytometry platelet crossmatch assay and commercially available Immucor Capture-P assay for determining compatible platelet units for patients with thrombocytopenia who are refractory to random-donor platelet transfusions; 2014-2016

SUMMARY OF THESIS

Characterization of Large Plasmids in Multi-Drug Resistant Strains of *Salmonella* Newport Isolates from Food Animals

Identifying the importance of large plasmids in multi-drug resistant strains of *Salmonella* Newport isolates from food animals. The methods included plasmid extraction, bacteria culturing, electrophoresis, pulse-field gel electrophoresis, polymerase chain reactions, cloning, plasmid purification, sequencing, and gel excisions.

Optimization of Living Donation in Anti-HLA Sensitized Patients Utilizing Paired Kidney Donation & HLAMatchmaker

The analysis of an alternative method of HLA matching for Kidney Paired Donation in a local living donor pool. Optimal matching based on the number of mismatched eplets generated by HLAMatchmaker and the avoidance of donor specific antibodies.

SUMMARY OF DISSERTATION

The Role of Anti-HLA Antibodies in Humoral Rejection

Identification of the clinical significance of complement binding and complement activating anti-HLA antibodies post-transplant. Identified a relevant relationship with Class II anti-HLA antibodies and antibody mediated rejection.

PUBLICATIONS

Manjanatha MG, Shelton SD, **Rhodes BS**, Bishop ME, Lyn-Cook LE, Aidoo A. 17 Beta estradiol and not genistein modulates lacI mutant frequency and types of mutation induced in the heart of ovariectomized big blue rats treated with 7, 12- dimethylbenz[a] anthracene. *Environmental Molecular*

Mutagen. 2005;45(1):70-9.

Foley, S. L., Zhao, S., White, D. G., McDermott, P. F., **Rhodes, B. S.**, Simjee, S., and Walker, R. D. Comparison of subtyping methods for *Salmonella enterica* serovar Typhimurium of food animal origins. *J. Clin. Microbiol.* 2006 ;44(10):3569-3577.

Ling, M., Smith, V., Matthews, C., Lee, C., **Rhodes, B.**, Harville, T. Detection and removal of anti-latex antibodies that interfere with PRA determination by fluorescence cytometry. *Human Immunology.* 2006;67(1):S113.

Ling, M., Smith, V., Matthews, C., Lee, C., **Rhodes, B.**, Harville, T. IgG anti-latex antibodies are frequently found in patients awaiting transplantation. *Human Immunology.* 2006;67(1):S114.

Lynne, AM., **Rhodes-Clark, BS.**, Bliven, K., Zhao, S., and Foley, SL., Antimicrobial resistance genes associated with *Salmonella enterica* serovar Newport isolates from food animals. *Antimicrob Agents Chemother.* 2008;52(1):353-356.

Rhodes-Clark, Bobbie. Summary of Solid Organ Transplantation. Visuals of the Clinical Histocompatibility Workshop. One Lambda. March 2010;125-127.

O'Connor, M., Harville, T., Pye, S., Imamura, M., Knecht, K., Frazier, E., **Rhodes-Clark, B.**, Morrow, W. Quantification, Identification, and Relevance of Anti-Human Leukocyte Antibodies Formed in Association with the Berlin Heart Ventricular Assist Device in Children. *Transplantation.* 2013;95(12):1542-47.

Rhodes-Clark B, Harville TO: Anti-B*44:02 Detected on Single-Antigen (SA) Beads Should be Confirmed Through the Use of Additional Detection Techniques: The CDC Assay Remains a Useful and Important Assay! *Human Immunology*, Volume 74, Supplement, November 2013, Page 75

Rhodes-Clark B, Harville TO: Optimization Of Living Donation in Anti-HLA Antibody Sensitized Patients Utilizing Kidney Paired Donation and HLAMatchmaker). *Human Immunology*, Volume 74, Supplement, November 2013, Page 76

Batra, A., Cottler-Fox, M., Harville, T., **Rhodes-Clark, B.S.**, Makhoul, I., Nakagawa, M. Autologous Graft versus Host Disease: An Emerging Complication in Patients with Multiple Myeloma. *Bone Marrow Research*, 2014:891427.

Rhodes-Clark B, Pandey S, Harville TO: Platelet Crossmatch via Fluorescence Cytometry: An Alternative Approach. *Human Immunology*, Volume 75, Supplement, October 2014, Pages 34-35

Harville IYP, Pandey S, **Rhodes-Clark B,** Harville TO: Elevated Background Fluorescence In Single-Antigen Bead Anti-HLA Antibody Assays Is Not Associated With A Specific Age, Gender, Ethnicity, Or HLA Type. *Human Immunology*, Volume 75, Supplement, October 2014, Page 57

Pandey S, **Rhodes-Clark B**, Harville TO: Case Report Illustrating Transplant Decision Making Based On Assessing Clinical Relevance Of Apparent Donor Specific Antibodies, Allele Specific Antibodies, And Shared Epitope Patterns. *Human Immunology*, Volume 76, Supplement, October 2015, Page 135

Rhodes-Clark B, Pandey S, Harville TO: Case Report: Post-Transplantation Acute Humoral Rejection Apparently Due To IgM Donor Specific Antibodies and/or Anti-Angiotensin Type 1 Receptor Antibodies. *Human Immunology*, Volume 76, Supplement, October 2015, Page 146

Rhodes-Clark B, Pandey S, Harville TO: Contaminating DNA Is Variably Detected At Each HLA Gene Locus By NexGen Sequencing And Can Result In Incorrect HLA Type Assignments. *Human Immunology*, September 2016

Pandey S, **Rhodes-Clark B**, Borja-Cacho D, Jethava Y, Harville TO: High-Resolution HLA-Typing Can Confirm Diagnosis of Graft Versus Host Disease After Orthotopic Liver-Transplantation. *Human Immunology*, September 2016

Joshi K, Pandey S, **Rhodes-Clark B**, Drobena G, Harville T, Veeraputhiran M: Utility of Fluorescence Cytometric Cross-Matched Platelets in Severely Alloimmunized Patients. *Blood*, December 2016, 128:3858.

Pandey S, **Rhodes-Clark B**, Borja-Cacho D, Jethava Y, Harville T: High Resolution (HR) HLA-Typing Can Confirm the Diagnosis of Graft Versus Host Disease (GVHD) After Orthotopic Liver-Transplantation (OLT). *Journal of Liver Disease Transplant*. December 2016, 5:3.

Rhodes-Clark B, Pandey S, Harville TO: Donor Specific Antibodies (DSA) Detected By C1q and C3d Assays Predict Antibody-Mediated Rejection (AMR) in Renal Transplant Patients. *Human Immunology*, Volume 78, Supplement 1, September 2017, Page 18

Pandey S, **Rhodes-Clark B**, Levy R, Harville TO: Antibody Mediated Rejection Not Detected at Autopsy in Infant with ABO Incompatible Cardiac Transplant Despite Increased Levels of C1q+ Donor-Specific Antibodies and Possible Previously Detected Antibody Mediated Rejection. *Human Immunology*, Volume 78, Supplement 1, September 2017, Page 216

Harville T, **Rhodes-Clark B**, Bennuri S, Delhey L, Slattery J, Tippett M, Wynne R, Rose S, Kahler S, Frye R: Inheritance of HLA-Cw7 Associated with Autism Spectrum Disorder (ASD). *Front Psychiatry*, September 2019, 10:612

PRESENTATIONS

One Lambda Advanced HLA Workshop, February 2013

“Is It Binding to Denatured HLA-Antigen or Native HLA-Antigen?”

ASHI 2014 Annual Meeting, September 2014

“Platelet Crossmatch via Fluorescence Cytometry-An Alternative Approach”

Immucor HLA Symposium, October 2015

“Post Transplantation Acute Humoral Rejection Apparently Due to IgM Donor Specific Antibodies and/or Angiotensin Type I Receptor Antibodies”

One Lambda Advanced HLA Workshop, March 2017

“Class II Donor Specific Anti-HLA Antibodies Detected by C1q Correlate with Kidney Transplant Allograft Rejection”

ASHI 2017 Annual Meeting, September 2017

“DSA detected by C1q & C3d Assays Predict AMR in Renal Transplant Patients”