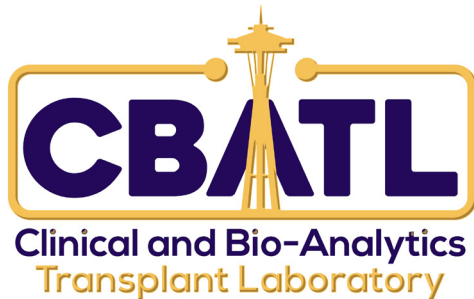


CLINICAL AND BIO-ANALYTICS TRANSPLANT LABORATORY



By: James D. Perkins,
MD, MSDS
Professor



Transplant surgeons, fellows, residents, medical students, and other healthcare professionals use the services of the **Clinical and Bio-Analytcs Transplant Laboratory (CBATL)** to research ideas to improve patient care. The services of CBATL include a “think tank” of individuals to provide analytical and interpretative expertise to researchers. The multiple technical modalities of CBATL include microsimulation using Markov models, mathematical optimization to optimize resources, genomic evaluation, data mining of large clinical repositories, text analytics with natural language processing, and many machine learning algorithms for classification and survival analysis.

CBATL was organized in 2010 by Dr. **James Perkins**, Professor, Division of Transplant Surgery, to help extremely busy clinical transplant surgeons, fellows, and residents conduct research to improve transplant patient care. CBATL has now expanded to help many others with a need in their research efforts. Dr. Perkins completed a Master's in Data Science in 2015 to expand the technical modalities available from CBATL. In 2019, CBATL started a fellowship in operational healthcare analytics to help with the many research projects.



Dr. Jorge
Reyes



Dr. Christopher
Little

Since 2017, CBATL has provided support for 30 published articles, over 20 national and regional oral abstract presentations, and three international invited presentations. Dr. **Jorge Reyes**, Professor & Chief, Division of Transplant Surgery, recently gave an invited international presentation at the American Association for the Study of Liver Diseases with a title, “Split Liver Transplant: Should we push for it?” This presentation resulted from a publication in *Transplantation* in June 2019 entitled, “**New Evidence Supporting Increased Use of Split Liver Transplantation.**” This work encourages liver transplant centers to utilize splitting donor livers to transplant two waiting candidates instead of only one candidate, thus saving lives. Dr. Reyes used CBATL’s resources of data mining a large data repository and machine learning algorithms while working with UW surgical resident Dr. **Christopher Little**, Research Resident, to publish, “**Livers From Pediatric Donation After Circulatory Death Donors Represent a Viable and Underutilized Source of Allograft**” in *Liver Transplantation*, September 2020. This research also expanded the donor pool allowing transplantation of more liver candidates.



Dr. Catherine
Kling



Dr. Lena
Sibulesky

Dr. **Catherine Kling**, Assistant Professor, as a transplant fellow working with Dr. **Lena Sibulesky**, Associate Professor, Division of Transplant Surgery, was able to conduct cutting-edge research with CBATL’s resources and published, “**Utilization of organs from donors according to hepatitis C antibody and nucleic acid testing status: time for change**” in the *American Journal of Transplantation*, in November 2017. She followed this with a publication in *Surgery* July 2019 titled, “**Listing practices and graft utilization of hepatitis C-positive deceased donor in liver and kidney transplant**” and another publication in the *American Journal of Transplantation* in November 2019 titled, “**Three-year follow-up of aviremic hepatitis C-positive kidneys.**” This work expanded the pool of donor organs allowing more transplant candidates around the world to be transplanted. She is now using mathematical optimization to research a new liver allocation model to improve graft survival following liver transplantation.



Dr. Mohini Dasari

Dr. Sibulesky, with CBATL's resources, expanded the prior work on using HCV positive donors and published, "Can we mitigate the effects on simultaneous liver-kidney transplantation through increased utilization of HCV-positive donors?" in the *American Journal of Transplantation*, October 2018. Working with Dr. Mohini Dasari, Chief Resident, and using CBATL's microsimulation technology, Dr. Sibulesky

was accepted for a recent publication in *Experimental and Clinical Transplantation* entitled, "Prescriptive Analytics Determining Which Patients Undergoing Simultaneous Liver-Kidney Transplants May Benefit From High-Risk Organs." These studies helped improve the organ shortage for both liver and kidney transplant candidates.



Dr. Andre Dick

Dr. Andre Dick, Associate Professor, Division of Transplant Surgery, using CBATL's resources had a presentation at the American College of Surgeons annual meeting October 2019 and a publication entitled, "Does the Funding Source Influence the Long-term Patient Survival in Pediatric Liver Transplantation" in *Pediatric Transplantation*, March 2021. Dr. Dick is currently conducting research on the cutting-edge topic of how the area

deprivation index (community resources) of transplant candidates influence their post-transplant survival in liver and kidney transplantation with Dr. James Hendele, a recent graduate of the Transplant Fellowship at UW. These research efforts help programs study the socioeconomic support needed by transplant candidates and recipients to provide the best long-term survival.

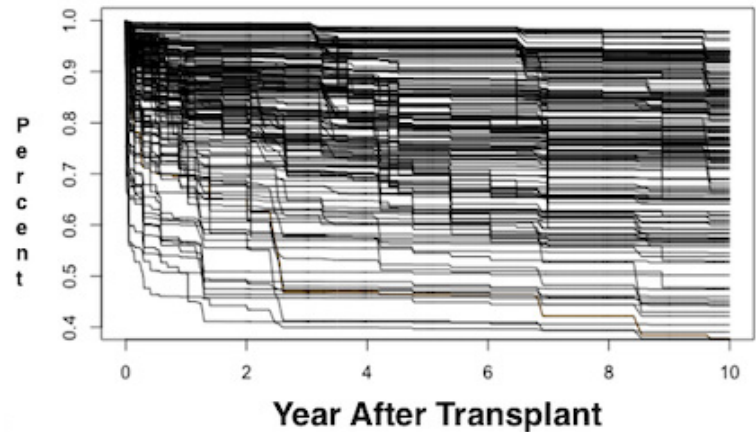


Dr. Mark Sturdevant

Presently, CBATL is supporting 15 different research projects with our UWMC and Seattle Children's Hospital transplant surgeons, hepatologists, nephrologists, fellows, residents, medical students, general surgeons, and vascular surgeons. The goal for these projects is to improve patient care. There are too many other research projects to mention but one very exciting project led by Dr. Mark Sturdevant, Associate Professor,

Division of Transplant Surgery, and our hepatology colleagues, is exploring many different new machine learning survival algorithms to find an evidence-based system to allocate nondirected, anonymous living liver donor hepatic grafts (Figure 1). These donors are heroes in that they give up a part of their liver so a person unknown to them can live. This allocation model will honor these donors by providing a model that predicts long-term graft survival.

Figure 1



DR. ANDRE DICK IS APPOINTED SEATTLE CHILDREN'S SENIOR VICE PRESIDENT (SVP) AND SURGEON-IN-CHIEF



On January 26, 2022, [Seattle Children's announced Dr. André Dick was appointed Seattle Children's senior vice president \(SVP\) and surgeon-in-chief](#). Dr. Dick has served at Seattle Children's since 2008, first as a surgeon in the Division of Transplant Surgery, then in 2016 as surgical director of Kidney Transplantation. In 2017 he became clinical director for the surgical inpatient unit, and in 2020 was appointed associate surgeon-in-chief. Dick accepted the role of interim SVP and surgeon-in-chief in April 2021. He is also an associate professor of surgery at the University of Washington (UW).

A champion of addressing racism and promoting an inclusive culture, Dick is an inaugural co-DEI (diversity, equity and inclusion) advisor to the American Society of Transplant Surgeons executive council and is also co-leading Children's Health Equity, Diversity and Inclusion (HEDI) Education and Leadership Committee which is focused on providing anti-racism education and training opportunities for our workforce.

He brings this vital lens to his role as surgeon-in-chief, where he is responsible for Seattle Children's surgical operations, ensuring all aspects of operative care function safely, equitably and efficiently. André will also focus on addressing the impact of Social Determinants of Health (SDOH) to deliver more equitable care to the patients and families we serve, as well as expanding our clinical capacity.